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THE EFFECTS OF LIGHTNING UPON ANIMALS.

BY G. A. BANHAM, M.R.C.V.S., BROWN INSTITUTION, LONDON.

(Continued from page 253.)

Motor Power.—The motor power of lightning has been taken advantage of for mechanical work. Dr. Sestier tells us that a Scotchman, wishing to get rid of an isolated mass of rock, planted an enormous bar of iron upon it. The lightning thus provoked was not long in replying to the challenge. The rock was split into pieces, which were easily carted away, and made available for building purposes. Trees often present signs of cleavage or rending by mechanical force, as well as the effects of heat. Bodies have also been known to be thrown some distance from the place where they were struck.

Magnetic Power.—Lightning has the power of magnetizing iron. Thus Arago relates that lightning fell one day in a cobbler's shop; it respected the person of the artisan, but had the singular effect of magnetizing his tools. Dr. West reported a case to Dr. Taylor, in which a knife taken from the pocket of a boy struck by lightning had acquired magnetic polarity.

It is scarcely necessary to mention that magnetism developed in this manner on board ship is sometimes the cause of terrible accidents; the lightning being sufficient to take away completely the magnetism of the compass, and render it as useless as an ordinary piece of iron. If the fluid strikes the needle in the right direction, it has the power of increasing its magnetism.

Telegraphic communication is often interfered with.

Deposition of Chemical Substances.—Lightning also has the power of collecting and carrying with it all substances it meets, and it deposits its load at the point where it strikes. Thus the face of a vine-grower is reported to have been covered with a layer of *oxide of iron.* Fusinieri observed that houses struck by lightning were covered with a layer of *sulphide of iron;* he also found the same compound in the hearts of poplar trees on which lightning had fallen.

Sulphur is sometimes carried by lightning. It was found that the slates of the Castle of Heidelberg were covered with little yellow bodies. If sulphur, propelled by the electric fluid, falls upon substances susceptible of combining with it, these combinations are at once formed with an ease which will not surprise any one.

Effects on Living Beings.—We have been considering the physical properties of lightning, and its effects upon inanimate things, we will now pass on to that part which most concerns us as practitioners: viz., its effects upon *living organisms.*

The best way to comprehend the effects of lightning upon animals is, I think, to point out—first, those produced without causing death, and then to consider the *post-mortem* changes found upon animals that have succumbed to its effects; and, finally, to recite a few cases in substantiation of our conclusions.

The effects upon animals, without causing death, are very varied. Thus the hair and wool of animals, like the clothes of persons, have frequently been subjected to much violence and damage, while the body itself has escaped. Animals have frequently been stunned as though they had received a sudden shock or blow; the whole muscular system becoming relaxed, the pulse feeble, soft, and slow; the pupils dilated (although in some cases they are said to be sensible to light). The respirations are slow, deep, and interrupted. After a time the animal may recover consciousness, and soon appear perfectly well. The recovery, however, may be preceded by muscular convulsions, temporary unconsciousness, etc. Occasionally it may be followed by irregularity of movement and muscular wasting, in which case convalescence is slow. At other times paralysis of some of the limbs, the ears, etc., may remain. In the human subject

ringing in the ears (*Tinnitus aurium*), difficulty of articulation and deglutition (*dysphagia*), loss of common sensation (*Anæsthesia*), retention of urine (*Ischurta*) due to the paralysis of the muscular coat of the bladder, a metallic taste in the mouth, sensibility increased (*Hyperæsthesia*), delirium, loss of memory, insanity, and even tetanus, have been known to follow.

Amaurosis, or paralysis of the retina, is a frequent occurrence both in man and animals; it is usually of a temporary character, but it not unfrequently causes permanent blindness. The cornea sometimes becomes cloudy, and hæmorrhage occurs into the anterior chamber.

Animals may be simply struck down, with or without marks of burning on the hair or skin; or again, the burnings may in some cases be so severe that the animal succumbs to their effects afterwards. They are invariably slow in healing, although, as Dr. Sestier says, external lesions are seldom accompanied by bleeding or gangrene.

Abortion frequently takes place after a storm, probably from fright. This seems to be more common in cows than in mares. Entire herds of pregnant cows have been known to abort, whilst the mares remained unaffected.

Hæmorrhage from the nose (*Epistaxis*) has been recorded in the human subject, but I can find no account of its occurrence in animals.

Although it would appear, from the foregoing, that the effects of lightning on living beings are generally more or less dangerous to life, still the following cases will show that it is not invariably so, but that its action may be to restore rather than to destroy the vital energies.

Eyesight Improved.—Thus many instances are on record where persons have had their eyesight improved. According to Zootnyk, lightning fell on the church of Saint Mark at Roveredo on the 13th of August, 1783. It burnt the dress of the priest, aged eighty-four, who was saying mass, but he was enabled to read without his spectacles after it.

Blindness Cured.—Blindness is said to have been cured. An instance of this happened to Mr. Gordley, an actor at the Surrey Theatre, who had been deprived of the use of his right eye, but

recovered it again after a flash of lightning which fell near where he was standing.

Paralysis Cured.—We have several records of cases of Paralysis being cured. For instance, we read of an Englishman who had been taking ferruginous baths during the summer for Paralysis, without benefit; but he was cured in less than a second by a flash of lightning. Böhm reports that a cow which was paralysed in the hind-quarters (*Paraplegia*), as a sequel of difficult parturition, was lying in a shed near to which was a tree. During a thunder-storm the tree was struck by lightning, and the cow jumped up quite recovered.*

Post-mortem Lesions.—The *post-mortem* lesions found in animals killed by lightning are very little commented upon in our literature; but they have been more minutely recorded with regard to the human subject.

1. Bodies have been known to retain the position they were in before death. They have also been thrown some distance from the place where struck.

2. Bodies have been known to retain the power of sending a shock through persons who touched them.

3. The lesions found on the *skin* may be marks of burning: the hair, skin, and even the muscles beneath may appear charred. Blue or red streaks or spots (*ecchymoses*) may be seen in various parts, and they have been compared to trees, leaves, crosses, brooches, etc., that the person was wearing or was near when struck. Solutions of continuity in the shape of scratches, punctures, lacerations, and contusions may occur at the point of entrance and exit of the stroke. Loss of hair is another result; I do not mean by actual burning, but by subsequent depilation.

4. *The Muscular and Cellular Tissue* beneath the lesions found on the skin may present blood extravasations. The muscles may be flaccid or very rigid, although it is said by some that *rigor mortis* never sets in. The muscles or their tendons may be ruptured.

5. The lesions found in the *digestive organs* are congestions and blood extravasations into the omentum, liver, spleen, intestines, etc.

* Carus and Radius, "Wochentl. Beitrage," Band i., s. 370.

6. In the respiratory organs we find hæmorrhage from the nose (in animals?); blood extravasations into the trachea, bronchi, and lungs, and congestion.

7. In the *circulatory system* we may find rupture of the heart or vessels, and extravasations of blood in almost any situation of the body. The blood itself may be black (charged with CO_2), and the coagulum softer than in ordinary blood. It has been said that the blood is always fluid, but this has not been supported by experience, for in most cases the blood is found coagulated in the large veins and heart, as firmly as in the normal condition.

8. The lesions found in the *nervous system* are usually congestion of the brain (especially of the choroid plexus). It is said to be sometimes entirely disorganised and almost liquid.

9. Bones may be found fractured, the fracture varying from a simple depression of the bones of the head to fragmentation of the long bones, and sometimes to such an extent that one might even suppose the marrow enclosed in them had acted like a fulminating powder.

Decomposition.—Putrefaction is said to set in rapidly in all creatures killed by lightning.

Absence of Lesions.—In other cases no lesions whatever can be discovered, even after the most searching examination.

To explain the why and wherefore of all the phenomena met with in lightning-stroke, is, in our present state of knowledge, impossible. But impressed with the idea that bad reasons are better than none, I venture to give you the following hypotheses for your consideration:—

Why Bodies retain the same Posture.—The reason why bodies retain the same posture after being struck with lightning, is difficult to explain, especially as they must do so, in some cases, in defiance of all physical laws. Is it possible that *rigor mortis* sets in quickly, and that the muscular rigidity continues longer than usual? If so, it would be well to test the muscle for this condition. But this utterly opposes the recognised rule, that the earlier *rigor mortis* sets in after death, the less pronounced it is, and the shorter it lasts. But we must remember that this rule applies to cases in which the animal had been previously

exhausted, either from muscular exertion (as in hunting) or from some wasting disease.

M. Boudin relates (in the *Annales de Hygiène*) that a priest was struck by lightning whilst riding on horseback, without being thrown from the saddle. The horse continued his journey, and returned home; but the traveller was found to be dead, and firmly fixed in the saddle by the contraction and rigidity of his limbs.

The Rev. Mr. Butler relates a case in which a man was struck by lightning whilst in the act of feeding a dog with one hand and caressing it with the other. Both the man and the dog were petrified, as it were, in this position. The hand of the man was still holding the piece of bread.

Again, it is reported in a letter of Pope's to Lady Mary Wortley Montagu, that in July, 1718, two lovers were struck by lightning. The bystanders first saw a little smoke, and then the man with one arm about his lover's neck, and the other over her face as though to screen her from the lightning. They were struck dead, and already *grown stiff and cold* in this touching attitude. There was no mark or discolouration on their bodies, except that the girl's eyebrow was a little singed, and a small spot between her breasts (Lady Montagu's "Letters," vol. ii., No. 57).

Cause of Bodies being thrown Distances.—The cause of bodies being thrown distances seems to be that the lightning creates a sudden and enormous rarefaction of the air, so that bodies are propelled forwards with extreme violence towards this partial vacuum.

Electricity remaining in Bodies.—It is difficult to account for the fact that bodies struck by lightning are capable of storing up sufficient electricity to produce a shock in other people, but if we can believe such reports as the following the fact would appear substantiated. Thus M. Boudin (in the *Annales de Hygiène*) quotes some cases where people who attempted to raise the body of a person killed by lightning, have received an electric shock themselves. On June 30th, 1854, a man was struck in Paris, and his body remained in the rain for some time after it, which one might imagine, have conducted the electric fluid into the

earth. When the storm had somewhat abated, two soldiers approached to lift up the dead body, but the moment they touched it, to their great astonishment, they received a violent shock, accompanied by much pain.

Imprints on the Body.—Many curious stories are recorded where leaves, branches of trees, brooches, etc., have been found imprinted on the skin of bodies struck by lightning. Such statements ought to be received with the greatest caution. Baccaria pointed out years ago that they were simply the outlines of the superficial veins. Dr. Richardson succeeded in bringing out the outlines of the veins of the ear of a rabbit by a discharge from a Leyden jar. I am inclined to regard them in the same way that Professor Michael Foster kindly explained them to me, viz., that these arborescent marks may be simply extravasations of coloured serum, the colour being due to destruction of the red corpuscles, following the course of the blood-vessels, and so resembling (with a little aid from our imagination) the branches of trees and other objects.

Blackening of the Skin.—Although the skin may become blackened, it is by no means a constant phenomenon. Why it should not always be the case, is a very complicated problem to solve; and, as Professor M. Foster suggested, the nature of the covering, the condition of the atmosphere, and the exact path of the current, etc., may be all factors concerned in the result.

Fluidity of the Blood.—The fluidity of the blood is said to be one of the common signs of death from this cause. Why, I cannot say; for electric shocks, sent experimentally through blood, does not prevent its coagulating. But Professor M. Foster says that if shocks from a Leyden jar are sent into blood, it breaks up the red corpuscles, and sets free hæmoglobin; and it is quite possible that a serum stained with hæmoglobin thus set free has been mistaken for fluid blood. It is possible, however, that decomposition of the hæmoglobin might prevent coagulation, by acids, etc., being set free.

Professor A. Rollett (in Stricker's "Histology," vol. i., p. 389) says that when the discharges are made to succeed each other at intervals of from three to five minutes, the following consecutive changes may be observed in the blood corpuscles:—The

circular disc-like corpuscles first present one or two projections at their borders; then they increase to three or five or more, which he calls the *rosette form;* then the surface becomes crenated, or *mulberry form* (from its resemblance to the surface of a mulberry); then these rounded processes become pointed—the *horse-chestnut form* (like the spines on the pericarp of a horse-chestnut); then these spikes are withdrawn again, and a coloured corpuscle results, which soon loses its colour, leaving a smooth colourless body that may remain a long time in the fluid unaltered.

Rigor mortis.—*Rigor mortis*, again, is said by some authorities to be conspicuously absent in cases of death from lightning-stroke. But Sir Benjamin Brodie remarked that the body of an animal killed by electricity became, as usual, rigid after death; and the experiments of Dr. Richardson and others proved the same. There are also well-authenticated cases where cadaveric rigidity was well marked. The rapidity with which *rigor mortis* sets in, in animals dying after muscular exercise and wasting diseases, apparently depends upon an excess of acid produced under these circumstances. Is it possible that acids may be produced by the effects of the electric fluid, and *rigor mortis* set in as a result? If so, it is not impossible to conceive why the rigidity in muscles previously exhausted should be less firm and of shorter duration than it would be in muscles which had *not* been previously exhausted.

Professor M. Foster says the conditions favouring or hindering *rigor mortis* are very complex; and although he would not go so far as to say that lightning-stroke might not do away with it, still he does not see any way of explaining such a result. And before we come to any conclusions, we require to have more exact observations upon this point than we at present possess.

Rapid Putrefaction.—With reference to rapid putrefaction of the carcases, Dr. Taylor justly remarks that putrefaction is modified by many circumstances, and death by lightning usually occurs during the summer, when the process is more readily developed. It does not appear to take place more speedily than in sudden or violent death from any other cause.

Man less susceptible than Animals.—From the following cases

it would appear that animals are much more susceptible than man, but it must be remembered that animals are more exposed to its influences than man. The clothing of the latter may, however, be a source of protection; just as Dr. Richardson found fur and feathers to be a certain protection in his experiments.

During a thunder-storm (in the Commune of Saint Leger-la-Montague) seventy-eight sheep and the two dogs watching them were killed at one flash, the woman in charge being only slightly affected (the *Siècle* of June 5, 1855).

A man was stunned by lightning which killed a cat lying beside him. The cat had only the bristles on its mouth (whiskers) singed; no other injury could be seen (*Pommer Schweiz Zeitschrift*, vol. iv., p. 306).

In the year IX. (1797 ?) of the French Republic the lightning killed, near Chartres, a horse and a mule, but spared the man who drove them.

On April 12, 1781, three French gentlemen were travelling on horseback. The three horses were killed at one flash, but only one of the riders.

On September 26, 1820, lightning struck (near Meulhould, France) a labourer and his team. The two horses were killed and the labourer escaped with only a slight shock.

In 1826 a lad was driving a mare near Worcester; the mare was killed, but the boy escaped.

In 1810 lightning entered the room of a gentleman named Corven, and killed his dog without injuring him.

On August 13, 1852, a farmer was driving four oxen (at Saint Georges-sur-Loire). Two of the oxen were killed, a third was paralysed, and the farmer himself only felt his left leg benumbed.

Animals at the Outside are usually struck.—When animals are standing together in a line or in an incomplete circle, those at the extremities generally suffer most seriously.

On August 2, 1875, during a thunder-storm at Rambouillet, the lightning fell on a stable in which were thirty-two horses standing in a row; thirty were knocked down, the last in the row being killed instantly, while the one at the other end was so seriously injured that it subsequently died (Arago).

At Flavigny (Côte d'Or) five horses were in a stable when lightning entered it; the two first and two last in the row were killed, while the fifth, in the centre, was uninjured.

Preference for White-coloured Hair, etc.—It would appear from the following that lightning has a preference for white-coloured hair, etc.; but it should be remembered that scorches, burns, etc., are more easily detected on white parts, and may easily be overlooked on the darker coloured parts. Therefore I only mention it because attention has been called to this fact by others.

A red-and-white bull was struck by lightning; the white patches alone were singed, the red were untouched (*Philosophical Transactions*, vol. lxvi., p. 493).

Two brown-and-white speckled oxen were struck by lightning; the white spots only were scorched. The same thing was observed with a horse (*Hufeland's Journal*, lxiv., p. 78).

Rupture of Muscles, etc.—Cases are recorded in which the heart was found ruptured. This was the case with three out of four horses killed at Dover, August 14th, 1793. In a horse which I examined, I found rupture of the diaphragm. I took particular notice that it was the *muscular* and not the tendinous part that had given way, thus proving it could not have been *ante-mortem*. For it is a recognised rule, I believe, that the tendons are more liable to rupture *before*, and the muscle *after* death. Therefore I conclude that this must have taken place whilst the animal was actually dying, or it may have been *post-mortem*, and due either to distension of the intestines with gas, or it was actually cut by the slaughterer's knife, although it did not look at all like a cut. I cannot be quite sure, and I simply record it here for what it is worth.

No Lesions to be Found.—The cases most deserving of our careful consideration are those in which no lesions at all can be found. Dr. Sestier, tabulating 119 cases of death from lightning, says that nineteen showed no external lesions, forty-two slight, twenty-eight extensive lesions, and thirty very extensive. And he calculates that about one-sixth of the cases of death present no external signs. Therefore it does not appear to be at all uncommon, as the following cases show:—

A shepherd at Treves seeing a storm approach, took refuge with

thirty cows beneath a beech-tree, and had scarcely done so when a violent thunder-storm occurred. The man found himself enveloped in a sheet of flame, was thrown down, and lost consciousness. On recovery—in about half an hour—he discovered that twenty-seven of his cows were dead, one was lying stupefied and soon recovered, and the remaining two were grazing. Twenty-four hours afterwards, Veterinary Surgeon Fuchs arrived, and found the twenty-seven dead cows lying on the right side, six did not exhibit any external lesions; twenty-one showed on the left side zigzag bands from two to four lines in width, formed by the hair being singed. The lines passed downwards to the knees, the haunches, and the teats. All the carcases were in a state of decomposition. In one animal the lightning appeared to have entered by the mouth. Beyond an accumulation of dark blood, nothing was noted internally (*Preuss. Verein Zeitung*, 1836, p. 45).

On May 13th, 1803, lightning killed a shepherd, his dog, and forty sheep, at Fehrbellin. Nothing could be discovered amiss with the sheep, but the lambs were entirely destitute of wool. The shepherd was naked, the left side of his head was shattered, there were two holes in his neck, and the skin on his limbs was scorched (Voigt's *Magazine*, vol. v., p. 503).

M. Doussac was killed by lightning at Castres, whilst riding with two friends on horseback. All three horses were thrown down by the shock, but in spite of the force of the explosion, it was impossible to find the slightest wound on their bodies.

Four horses were struck by lightning at Dover, and no marks could be found to show where they had been struck.

On September 9th, 1843, several horses were killed by the electric fluid in a stable, but did not show the slightest trace of any wound or scar.

Scheutzer asserts that no trace of a wound could be found on the body of a youth killed by lightning near Zurich.

Antoine Lairas assures as that he could not find the slightest mark of a burn or contusion upon the body of a young man killed by lightning at Metz.

The Abbé Richard (*Histoire de l'Air*) relates that a labourer who was killed by lightning presented no bruise or wound of any kind upon his body. It would not have been possible to discover

the cause of his death, had not several persons seen the thunderbolt fall which struck him.

I think I have related sufficient cases to show that death can occur, and has occurred, from lightning-stroke, without any external lesions. The reason I am so anxious to impress this point upon your minds is, that I know there are many veterinary surgeons and others who do not believe it is possible for death to occur from lightning-stroke without some external indications of its presence. Now since we are often called upon to certify as to the cause of death in animals, it becomes a professional necessity for us to endeavour to come to some definite understanding upon such an important matter. For my own part, I am fully convinced that atmospheric electricity does cause death *without any external lesions.*

The year before last I was called upon to certify the cause of death in some animals (horse and pigs) after that fearful storm which raged, particularly in the eastern counties, in the summer, and which, I expect, most of you are better acquainted with than myself (as I was comfortably asleep the whole time). Well, at that time I must confess I had no particular knowledge or views concerning the effects of lightning upon animals, except that I thought we ought to find some external signs of burning, etc.; and as the animals which I had to examine presented none, of course I hesitated to give a certificate. I referred to all the works I had at hand for information, but found none; so I immediately wrote off to the gentleman whose practice I was conducting at the time, for advice, relating to him the same history I had received from the farmer, and the result of my *post-mortem* examination of the carcases. This was as follows:—

The horse and pigs were perfectly well the previous evening at nine o'clock, when the horse was turned out in the paddock. In the morning, at six o'clock, the owner found the horse lying dead, with a piece of grass in its mouth, as though it had been struck by lightning when in the act of dividing the blades of herbage. The soil where the animal was lying was not disturbed at all, and showed no appearance of struggles having occurred. No other sign or lesion could be found, except the rent in the diaphragm, which I attributed to the knife of the knacker,

although, as I said before, it did not look like a cut; and it could not have been produced before death, for it was in the muscular portion, and the lungs were not very much congested, which would have been the case if rupture of the diaphragm had been the cause of death. With this explanation, my friend at once telegraphed to say, "By all means give a certificate of death due to the effects of the electric fluid." It was this circumstance which first prompted me to undertake the task of finding out as many facts as I possibly could concerning lightning-stroke in animals, and I have brought them before you in order to obtain your valuable opinions and experiences. It is only by narrating our own experiences, and inviting others to do the same, that we can hope to arrive at any satisfactory conclusions concerning such perplexing occurrences. It is difficult to account for the fact that all evidence is in some cases absent; but when we consider that men and animals may be stunned and remain unconscious for various periods, and then quickly recover, without showing the least external signs of violence, and that the effects of shocks sent through the system from a Leyden battery may be so sudden and violent, that the animal experimented upon may be killed without even altering its position, and without any external marks on the body—when, I say, we take these certain facts into consideration, it does not strain our imaginative powers very much to suppose that the shock produced from a discharge of atmospheric electricity—which must necessarily be *much greater* than that produced from any artificial battery—may be so severe that recovery is impossible, or that death is momentarily produced, *without any external evidence of violence*, etc., upon the body.

Some have explained this fact by assuming that the animal was not directly in the line of the lightning, but only in its immediate neighbourhood. But this is obviously an assumption, and nothing more, and must be so considered, although we may not be able, at present, to say precisely what conditions are requisite for such a result as this; still it is worth while insisting on the broad fact, that *death may occur from lightning-stroke without any marks on the skin, or visible internal lesions, etc.*

Diagnosis.—We should not, however, at the same time, be

entirely oblivious to various collateral circumstances, or we may fall into error. Thus we ought to consider whether there had been a storm at the time, and in the neighbourhood where the dead animal is found. Also the position in which the animal lay, the condition of the ground, as to whether it had been disturbed by pawing, etc.

The following case, recorded by M. Henri Benjamin, will, I think, illustrate the importance of these circumstances. "A horse was put in the stable healthy and well at night, after doing a good day's work, and ate its food up. In the morning, at 4 a.m., when the man went to give it its breakfast, it was found dead, lying on the right side, with the head and neck bent under the body; the rein which fastened the horse was *not* tight, nor was the throat-latch pressing on the larynx. The straw was but little disturbed, therefore death must have taken place quickly.

The *post-mortem* was as follows:—Intestines perfectly healthy, stomach contained the usual quantity of food; the lungs scarcely hæmorrhagic; the trachea was not filled with frothy mucus, as is usually the case by strangulation; the heart was normal. The left side of the neck and face, which lay on the earth, was swollen in consequence of blood infiltration. The muscles of the neck were studded with ecchymosed spots, and nothing could be detected amiss with the cervical vertebræ. The coverings of the brain and spinal cord were very hæmorrhagic; the jugular vein filled to excess with blood. On the hind leg the hair was found to be off, and the skin bare and covered with crusts.

The author believed that death had occurred from the horse losing its equilibrium whilst endeavouring to bite its legs, and fell to the ground in this position, viz., with the head and neck under the body (*Recueil de Médecine Vétérinaire*, No. 18, 1872).

Now if a thunder-storm had occurred during the night in the neighbourhood where such a case as this happened, it might easily have been mistaken for lightning-stroke.

Again, any sudden death which occurred during a storm might be put down to the effects of lightning-stroke, whereas in reality it might have been done maliciously by mechanical force, as blows upon the head; but this is not so likely to occur without

showing some external marks of the violence, although it it did, the microscopic lesions would be the same, viz., concussion of the brain, with hæmorrhage, or the brain actually wounded.

Death by strangulation could hardly be confounded with that from lightning-stroke; but if such a case should occur, we ought to question carefully the position in which the animal was found, and notice whether there were any strangulation marks on the neck, such as blood extravasations, mark of a cord having been tied tightly round the neck, indentations, or rupture of the trachea or larynx, and engorgements of the large veins anterior to the strangulated part. Such a case as that above recorded might have been mistaken for strangulation if the animal had been fastened by means of a "neck-strap" instead of a "head-collar." Gerlach says that the anatomical lesions from strangulation are usually more striking in large animals than small. Williams says he has seen one instance where a valuable horse died from tonic spasm of the heart, in consequence of sudden fright. Might this not occur during a thunder-storm? It certainly might be mistaken for death from that cause.

Cause of Death.—THE CAUSE OF DEATH in lightning-stroke is no doubt due to a *shock to the nervous system*, accompanied by sudden arrestation of the heart's action. This may be brought about in several other ways, such as a blow on the head, a draught of cold water, and also, in the human subject, by a blow at the pit of the stomach or strong mental emotion. Poisons such as aconite, hydrocyanic and oxalic acids, etc., are said to destroy life in the same way.

Experiments also show that the action of the heart may be stopped either by direct stimulation of the vagus, or by reflex action when other nerves are stimulated. Especially is this the case with those of the intestines (*Nervi mesenterisi*), but if the stimuli (shocks) be sufficiently powerful, inhibition of the heart's action will occur from whatever part of the body they may come.

Prof. Michael Foster further says that a powerful shock will destroy the irritability of even an ordinary nerve—*a fortiori*, it would destroy (or suspend) the functions of the more delicate, more irri-

table, more unstable grey matter of the brain and spinal cord. Hence death might take place *without* any visible external lesions.

Heusinger remarks that there can scarcely be any doubt that communicated electricity acts by preference on the nervous system. Most frequently the lightning enters the body by the head, not only in man, but also in animals, and often kills without producing any perceptible lesions. Frequently it follows the spinal cord, and great nerve-trunks. It is possible that lesions will be found in the minute structure of the brains, etc., of people or animals killed by lightning in whom no lesions can at present be found. All the cases recorded prove that the brain has an attraction for the electric fluid, and that its primary action is a decrease, and in a higher degree an extension of innervation ("Pathologie Comparée," vol. i.).

From the foregoing it would appear that the nervous system is the channel through which the shock passes, but Dr. Richardson's experiments led him to believe that the blood is a better conductor than either water, muscle, or nerve-matter (white or grey) so that the course of the lightning and the electric force through the body of an animal is preferentially by the blood. Ranke also says the conducting power of muscle is very slight.

We have seen that death from lightning is produced by "shock to the nervous system," and since the system can receive shocks from other causes, it would perhaps be well for us briefly to consider them.

Shock from other Causes than Lightning.—The effect of a shock seems to be manifested by impairment of the heart's action. This may be brought about by agents acting on the body itself, as in contusions, bruises, blows, and concussions (especially when involving the epigastrium, cranium, neck, joints, spine, etc.); also from gunshot wounds, surgical operations, fractions, etc.; or by agents affecting the mind, as mental alarm or terror; or cold; and some poisons may also produce it.

Most of the causes act both on the body and mind; some poisons, however, as potassium, cyanide, and upas antiar, when injected into the blood, act directly upon the fibres of the heart,

impairing its power of contractility, whilst the nervous system is not implicated; whereas woorara acts upon the nerves only.

The effect produced by any shock depends, to a certain extent, upon the person; thus, a person with a powerful constitution is much less affected than a delicate nervous one. Also excitement, anger, and passion, etc., are found to counteract, whilst grief, fear, etc., are, to a certain extent, found to increase its effects.

When the shock is not powerful enough to destroy life at once, we find the heart's action diminished, consciousness, intellect, and the senses blunted or altogether lost, and the will paralysed; contractility of the sphincters lost; respiration feeble and irregular, and sometimes scarcely perceptible. The temperature is lowered.

Shock generally produces death by syncope or asthenia. The heart may either be found contracted and empty, probably due to a sudden violent impression on the nervous system; or flaccid and distended, from the sudden cessation of the contractility of the muscular fibres of the heart.

We have no knowledge of the changes which occur in the intimate structure of the nervous apparatus, and consequently cases of death not unfrequently occur where no lesions can be detected after death. Dr. Carpenter remarks—and it is difficult, says Mr. Jordan, to see how any other opinion can be entertained—"*that there is no kind of death which leaves the animal organisation unchanged.*"

In any sudden death the nervous system is said to be engorged. The blood coagulates imperfectly, the crasamentum being loose and dark coloured. *Rigor mortis* commonly (perhaps always) occurs, and is sometimes very marked.

From the foregoing, it appears that the human subject is much more susceptible than the lower animals, to the effects of shock. This is no doubt due to the higher development of their nervous system, and consequently they are more easily excited or depressed than are animals. But it cannot be denied that although animals may suffer collapse, and even death, from external violence, still they—well, I was going to say *never* succumb to mental shock; but if we may regard as such the case recorded

by Prof. Williams of a she-goat becoming completely paralysed, etc., after losing its kid, we might say it does occur sometimes. I think we may, at any rate, conclude that mental emotion may, and does play a far greater part in diseases of animals than we are at present willing to admit.

Conclusions that may be derived from the foregoing.

The conclusions that may be derived from the above are as follows:—

1stly. That lightning may affect animals in various ways, with or without leaving traces of its presence.

2ndly. That the signs most commonly met with, without death, are either nervous derangement or those of violence or heat.

3rdly. That if death is not produced at once, recovery is usually rapid.

4thly. The lesions after death are those produced by violence, such as stabs, perforations, ruptures, fractured bones, etc. Also those due to the effect of heat, such as the hair being singed, the skin and flesh charred, etc. Extravasation in any organ or tissue of the body. *Rigor mortis* usually well marked. Blood usually coagulated in the large veins, although the clot may be loose and soft. Metal substances (such as horseshoes) may be magnetised, and even show signs of melting.

5thly. That bodies may remain in the living position is to be remembered, but modern proof is requisite.

6thly. That bodies may retain sufficient electricity in them to produce a shock to those who touch them, also requires to be authenticated by modern observers.

7thly. That *rigor mortis* may come on quickly and disappear as rapidly, or even last longer and be more marked than usual. But more accurate observations and experiments are required to settle many points in connection with this subject.

8thly. That the so-called "*arborescent marks*" are due to extravasation of coloured serum or blood along the course of the vessels, or collected into patches (ecchymoses).

9thly. That, as a rule, the blood coagulates, but it may do so imperfectly, or the clot may be overlooked from the colour of the

blood; and it is not impossible that, if examined long after death, it may be perfectly fluid, from the generation of acid.

10thly. That no reliance can be put on the fact that bodies quickly undergo decomposition.

11thly. That although external evidence is usually found, still we must not forget that death may be produced without any.

12thly. That if no external signs are present, the surrounding objects should be thoroughly examined for marks of the presence of lightning; the position of the animal, the condition of the ground, and the skin of the animal noted. The shoes may also be tested for magnetism.

13thly. Death appears to be produced by failure of the heart's action, due to a shock to the nervous system.

14thly. It would be advisable if some persons well acquainted with experimental physiology, would conduct some experiments with a view of settling, if possible, some of the points in connection with the action of lightning-stroke on animals.

Concluding remarks.

This, then, ends what I have to say on the subject. I hope I have collected and so arranged the matter to make it intelligible and easy of comprehension. I also trust you will give free ventilation to your own opinions and experiences, so that they may be a guide, not only for us present here to-night, but also to the profession at large. Finally, I have only to thank you, gentlemen, for giving me the opportunity of being amongst you, and for the kind attention with which you have listened to my paper.

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SEPTICÆMIA FOLLOWING RETENTION OF THE FŒTUS, THE RESULT OF MAL-PRESENTATION DISCERNED *POST-MORTEM*.*

BY RICHARD W. BURKE, STUDENT, ROYAL (DICK'S) VETERINARY COLLEGE, EDINBURGH.

MY paper consists in the description of two cases of particular interest to students of veterinary obstetrics.

An aged bay cart-mare, the property of Mr. Goode, of Hatton, which was said to have presented *labour-pains* at the usual period of parturition, but without due delivery of the fœtus occurring, continued exhibiting symptoms of violent straining at different intervals of time for a period exceeding the natural by four months. Quite one week previous to her death the scapula, with another softer portion of the fœtus, was dislodged, and ejected *via* the vagina.

During the last few days of her life, the mare strained still more violently, the paroxysms occurring at intervals of a few hours; until at last, on the day of her death, she suddenly developed symptoms of severe Colic whilst out in the fields, became very restless at the onset, but soon marked depression supervened—she was observed to be drowsy, comatose, and to "drop as suddenly as if shot."

The cause of the *sudden* death, in my opinion, was effusion between the brain and its membranes.

At the request of Mr. Edward Stanley, M.R.C.V.S., of Warwick, I visited the field where the animal lay, and made an au-

* Read before the Edinburgh Veterinary Medical Association, Dick College.

topsy in the presence of the owner, with the help of Mr. Stanley's assistant, to the following effect:—All the serous cavities of the body—abdomen, thorax, pericardial sac, cranium—were more or less filled with a sero-lymphoid exudation having a sanguineous tinge. The brain, in addition to showing an excess of serous effusion into its ventricles and between the space which intervenes between it and its membranes, was much congested, and extravasations of dark blood had taken place into the structure of both cerebral hemispheres, but more largely into that of the right hemisphere. The bladder contained but a little urine, which was thick, greenish, and of a sickly odour. The blood which emerged from the vessels on section of the lungs and other internal viscera, remained fluid and very dark, staining the knife and the skin of the hand by the dissolved hæmoglobin which was present in *free* solution in it. The fœtus in utero gave the appearance of a freshly-prepared, yellow, clay model. Its head had ruptured the wall of the uterus, and was rendered adherent to the wall of the right pelvis by croupous inflammation, the bands of adhesion being now easily severed by the hand. The body of the fœtus, which presented different centres of superficial (shallow) absorption, collapsed on manual pressure as if a non-resistant air-ball, the ribs possessing a pliability and softness the exact counterpart of the bones of tinned fish. The long bones of the fœtus, which fractured on very slight force being brought to bear on them, appeared in places in no way unlike bones the seat of Osteo-porosis—being *spongy*.* This last was apparently the result of softening and removal by absorption. The fœtus, which was of large size, was found with its *back presenting*;† its anterior extremity faced the right pelvis, its posterior occupied the left. On separating the structures of the fœtus by the hand, such a stench issued as is wont to issue from decayed, putrid matter. The os uteri was normal. The mucosa of the intestines of the mare showed patches of thickening

* I washed the bones before I ascertained this condition.

† The mal-presentation received no surgical interference, so far as I understand, during the life of the patient. The mare, strange to remark, although constantly straining, was made to perform heavy work till the last week of her life, the diagnosis of the attending veterinary surgeon being that no foal existed.

and hyperæmia from extravasation and serous effusion into its submucous connective tissue. The solitary glands were darkened and enlarged from extravasation, and some of them were readily friable.

These conditions, then, aided by the description of the symptoms observed immediately prior to death, led me without scruple to pronounce the case one of septic poisoning, from the dissolution and absorption of molecular parts of the dead fœtus into the maternal circulation. It was so reported to Mr. Stanley.

Why this softening and absorption of the fœtus did not result sooner, is a problem we have no adequate means of solving. In the multiparæ, and, indeed, occasionally even in the uniparæ, absolute mummification of the fœtus is by no means an infrequent incident, the latter being often preserved whole throughout the life of the mother, when no straining is present, and therefore no air admitted into the cavity of the uterus. So long as no anatomical interruption of the fœtus accrued, putrefaction of it was impossible, or at least impracticable. But once the normal contour of the body is broken, and sloughs, superficial or deep-seated, induced in the act of straining, Septicæmia in the first, and Waste-product Fever in the second, follow as inevitable results. Whilst the animal exhibits signs of straining, the "os" being dilated, the uterus admits of the passage of atmospheric air into its interior, thus exposing the fœtus, when presenting external anatomical interruptions, to bacterial onslaught and putrid change. When, on the contrary, the fœtus preserves its external contour, it also preserves immunity from septic infection (impregnation), and portions of it which may slough from its interior, though *dead* tissue, is, as Chiene and Ewart have now shown by experimental demonstration, not necessarily *putrid*,* which, becoming absorbed into the maternal circulation, occasions, not Septicæmia, but a

* Because there is no presence of *bacteria* in it, nor of their *spores;* because inoculation of it, in large quantity, into the system of an animal is followed by negative results, but when it is exposed to the action of the air it acquires active properties. The notion that bacteria are harmless creatures, and that they exist in countless numbers in all the organs of the body, is erroneous. Their presence has only been demonstrated on *epithelial* surfaces, whilst on *endothelial* surfaces they have, on the contrary, been shown not to exist—during life, at least. And they are "harmless" only whilst the vitality of their *host* is resistant.

condition less injurious than it in its operation, viz., a condition now recognised under the more legitimate designation—*simple Waste-product Fever*.

II.—Apparent secondary protracted labour-pains.

A bay harness-mare—a primipara—the property of Rev. — Courtaney, of Hatton Vicarage, evinced signs of premature pains, with "dejections of clotted blood, painful spasms, and quiverings of the vagina" (vulva), as Mr. Courtaney described the symptoms of the case to me. I recommended tepid water injections into the vagina, and the administration of stimulants (whisky) till the following day, when she was visited by Mr. E. Stanley, in company with myself, who gleaned by the description of the groom that the fœtus had escaped during the night, although the remains of it were not produced for our inspection.* The animal continued straining and showing signs of apparent *secondary* labour-pains for some days after, when she was removed to Mr. Stanley's infirmary for further treatment. Hand *per rectum* discerned no signs of the presence of a second fœtus in the uterus; exploration of the vagina was attended by symptoms of severe straining, the animal groaning whilst the hand was retained within that cavity. The os, which to the feel much resembled a small penis in a state of active erection, *scarcely admitted the passage of the tip of the minimus*.† The meatus urinarius was patent, and micturition, which was somewhat frequent was otherwise normally performed. Mr. Stanley next also examined the condition of parts, and corroborated my description A somewhat copious flow of mucus (tinged with blood) from the inferior commissure of the vulva, with constant straining, continued throughout the time of my brief sojourn in Warwick, but the further history of the case I have not obtained. The animal received tonics and antiseptic injections.

I remember having before seen, in India, an analagous instance of apparent secondary protracted labour-pains in the mare, and hence deemed the case above outlined of sufficient interest to merit record.

* We might suspect premature rupture of the amnion?

† In the human being we hear of delivery being induced, in protracted labour, by forcible dilatation of the os by the aid of the fingers and by the hydrostatic dilator.

LYMPHADENOMA OF SPLEEN IN A PIG.

BY M. HEDLEY, M.R.C.V.S., VETERINARY DEPARTMENT, IRELAND.

A SHORT time ago, my attention was directed to a large spleen. It had been taken from a pig, and weighed five pounds four ounces. The normal weight of a spleen taken from a pig of its breed, etc., is from four to six ounces. Owing to the greatly altered contour and size of this organ, it was with much difficulty that I was able to recognise what it was. It looked very like a large number of chestnuts tightly packed into a bag. The protuberances were yellowish-white in colour, and in some instances, where they were not *en masse*, their individual contour was defined by a portion of the spleen, which was yellower than normal. The sections showed a variety in both colour and substance. Some were dense and white, others were yellowish, exhibiting rings of a rather dark-red colour in the centre of which there was a white spot. These latter seem to me to be the *newest* growths. In some instances I found the centre quite soft, and a clear fluid, rather like glycerine in consistence, escaped. This fluid was encapsuled by a dense fibrous structure, and was generally surrounded by several other newer-looking protuberances.

I was unable to see the pig's carcase, so I cannot give any detail as to the lymphatic glands or anything else.

From what I saw of the spleen, I am inclined to diagnose the disease as Lymphadenoma. I send a portion for your examination and opinion. The specimen has been in spirit for a few days, and is surrounded with a comparatively large portion of spleen structure. If you consider the matter worth publishing in the VETERINARY JOURNAL, I shall be most happy to tender it for such purpose.

[The case was undoubtedly one of Lymphadenoma of the spleen, and a very remarkable case, so far as the porcine species is concerned. It is much to be regretted that the carcase could not be examined, and that no history of the pig was forthcoming. The portion of spleen forwarded by Mr. Hedley, was one of the Malpighian corpuscles, enormously enlarged by the aggregation of lymphoid cells.

We purpose shortly to contribute a paper on this interesting disease in the lower animals.]

ANASARCA IN THE FŒTUS.

BY J. WILSON, M.R.C.V.S., NANTWICH.

I SENT a fœtal monstrosity, in the shape of a calf, which I took from a two-year-old heifer last week. I think it is even a more remarkable one than that which I sent last year. It is more like a pig than a calf, and was certainly the most puzzling case I have met with since I began practice. The heifer had not made much preparation; the passage was very confined, and she strained very heavily upon examination. The first and only part to be felt was the saccular dilatation (and when I was sent for, the farmer said the womb was coming before the calf). I was in a fix what to make of this, as it felt too thick for any of the placental coverings, and I could scarcely think that it was a duplication of the uterus. The throes were so powerful that it was a most difficult matter to push this bladder or dilatation back; however, I pressed it back with my doubled fist, and with some difficulty got hold of the head and brought it as far forward as I possibly could, and thought I would manage to insert a hook in the orbit; but whenever I removed my hand, either for a hook, or from losing power, this bladder was immediately pushed in front of the head, and completely filled the passage. However, after some labour, I succeeded in fastening a hook in each eye, and a small cord upon each foot, and pushing the bladder or dilatation back; I ordered the assistants to put some traction on the cords, but the os uteri and vagina were so constricted and dry (she had been attempting to calf for a considerable time before I was sent for), that I saw there was little chance of removing it entire, and I did not care to cut, as I was in a fog to know what I had got. The cow was also becoming very weak, and presented so little chance of recovery that she was knocked on the head, and the calf sent to me.

The body was in the condition in which it was sent, except that one of the hind-legs had been eaten off by a dog. These limbs were short and rigidly flexed; so that it would have been difficult to remove them. In addition, the loins of the fœtus were broad.

It is one thing to see a distorted fœtus on a table, and another to feel it in the uterus of a heifer. I have only been four-and-a-half years in practice, and I think I have had to remove fœtuses of nearly every shape and form. But I never was so puzzled and baffled as with this case.

[The case recorded by Mr. Wilson is almost, if not quite, unique in English veterinary literature, though mention will be found of similar instances in Fleming's "Veterinary Obstetrics" (p. 377). The condition of the fœtus was that of general anasarca. The calf was small and immature, with improperly-developed tissues and soft bones. The muscles and subcutaneous tissue were œdematous—the latter to such an extent as to form large cysts beneath the skin in various parts of the body, but particularly the neck and abdomen. In the first-named region there was a very large cyst, which was evidently the one that embarrassed Mr. Wilson when he first examined the animal. It was large and heavy enough to incline the head to one side, so that when he pushed the latter back the sac came forward. Incision of this sac, and thorough lubrication of the genital canal, as recommended in "Veterinary Obstetrics," would probably have allowed delivery to be effected.]

THERAPEUTICAL NOTES ON PULV. IODOFORMI CO.

BY J. DOWLING ALLMAN, PHARMACIST, A.P.S., LONDON.

FOR the information of those gentlemen who have written to me respecting the history of Pulv. Iodoformi Co., I beg to communicate the following therapeutical notes, as a supplement to my article in last month's Journal. Pulv. Iodoformi Co. must not be confounded with the substance known as "Iodoform," and although closely allied to it, it is chemically different. It is prepared, from my special formula, by Messrs. C. J. Hewlett and Son, Wholesale Druggists, Cree Church Lane, London, and can be obtained from them upon application. It occurs in a fine, pearly yellow powder, having a strong, persistent, saffron-like

odour. Whatever position the substance may finally acquire in veterinary surgery, there can be no question as to its value when used with the "Nasal Insufflator" in diseases of the nasal membrane. Besides its intrinsic merit in curing Ozœna and Nasal Gleet, if used at the commencement of simple Nasal Catarrh or Influenza it will cut short an attack, by killing the septic germs which set up the irritation of the Schneiderian membrane. This may be considered a bold assertion, but I am satisfied to accept the responsibility attending such a statement. Experience has demonstrated the value of Pulv. Iodoformi Co. when used locally in painful ulcers, serving to alleviate pain and promote cicatrization. My friend Dr. Swanwick, of West Hartlepool, has used Iodoform pessaries made with cacao-butter, with considerable success in cancerous sores of the uterus. This eminent surgeon has demonstrated, beyond doubt, that a few of those pessaries, not only eased the pain, checked the cancerous discharge, but gave decided relief to the patient. I have seen a saturated solution of Iodoform applied to cancer of the tongue ease the intolerable pain, so much so, that it allowed deglutition, which was impossible before the application. Applied in the dry state, or mixed with vaseline, it answers admirably as a dressing for fistulous openings, as it not only acts as a powerful local anæsthetic, but also as a decided stimulant to nutrition. Thus, for instance, a suppository containing fifteen grains of the drug, if introduced into the rectum, will so benumb the parts that defecation will take place without the person or the animal being cognisant of it. A friend of mine, a surgeon, who has suffered for years with painful fistula, and a good deal of mucous discharge from the rectum, has found considerable relief from the use of Iodoform suppositories. They have invariably eased the pain in defecation, and checked the discharge to a great extent.

Iodoform, in its pure state, can be administered internally with decided advantage as an alterative in skin diseases, especially those of the scaly description. Although the drug is closely allied to iodine, yet its physiological action is totally different: why this phenomena should exist, I am not quite in a position at present to explain. It is well understood amongst all therapeutists, that minute doses of iodine, taken internally, cause

some gastric uneasiness and a disagreeable metallic taste in the mouth, followed with increased salivary flow, coryza, and slight pain in the buccal membrane. Now these symptoms have not been noticed after the exhibition of Iodoform. I have taken myself as much as five grains of Iodoform without any apparent strain of symptoms, yet the smallest dose of iodine immediately produces all the characteristic signs of iodism. It is also an established fact that iodine and iodide of potassium will produce cutaneous eruptions known as iodic Acne and petechiæ, whereas Iodoform is given for, and even cures Acne. P. Iodoformi Co. is being now tried by some eminent veterinarians, who I hope will be able to record and corroborate all that I have borne testimony to, in introducing it to the notice of the veterinary profession. The substance should take a prominent part in canine practice. Given internally, in the form of a pill, in doses of three or five grains, it will be found an invaluable alterative in the various forms of skin diseases in dogs.

HEART-DISEASE IN A BOAR AND COW.

BY R. ROBERTS, M.R.C.V.S., WREXHAM.

THE following are the details of a case of heart-disease in a boar.

The pig was a black Berkshire boar, and was from twelve to eighteen months old; he had served a few sows before he was affected. My attention was called to him on the 6th of December last, when he was very stiff in the hind-legs, humping his back, and his testicles drawn up; he had great difficulty in rising, and seemed in pain when he moved. The appetite was not affected, and he was in a tolerably good condition. He had been in this state for about two months, and was gradually getting worse. My conclusion was, that he was affected with rheumatism. I recommended that he should be kept in a warmer place; but gave no medicine.

He continued in the same state for some weeks; but towards the end of January it was apparent that he was becoming worse, as the above named symptoms were more severe, and his appetite was not so good.

On the 24th February my attention was again called to him, as he was in great pain, no appetite, and his bowels constipated. I told the attendant that he would do no good, and recommended that he should put it out of his misery. This was done on Monday, the 28th.

I called to see the carcase that afternoon. I found the skin much discoloured on the ears, top of the neck, and the loins; owing to his colour being black, this was not seen until the carcase was dressed. My attention was also called to the peculiar form of the heart, which I forwarded to you. During life, of course, I could not examine the veins, or else, no doubt, the jugular circulation would have revealed the condition of the heart.

Similar Case in a Cow.

On the 30th of October last, I was requested to examine an old cow, the property of ——, which had been lame for some time. I found her very stiff in both hind-legs, skin yellow, and a distension of both jugular veins increasing by exercise.

Diagnosis.—Disease of the liver, and also of the heart. I gave Fer. powders for the first.

On the 23rd of November, by the request of the owner, I saw her again, and found that she had a great difficulty in rising; she rested her nose on the ground, and pushed her horns against the wall, and breathed very quick after rising, also the jugular veins were much distended during the consequent excitement. As I believed the blood was obstructed at the heart, I recommended her to be slaughtered, which was done.

Post-mortem examination.—The liver hard, the pleura adhered in several places, the inferior margins of the lungs were congested and of a rosy colour; the pericardium healthy; heart of natural size, but on opening the left side I found the auriculo-ventricular foramen almost closed by a layer of coagulated fibrin covering the mitral valve, with vegetive growth

underlying the fibrin, similar to, but not so extensive as the specimen sent.

[The boar's heart showed the usual indications of rheumatic endocarditis—valvular erosion and fibrinous depositions on the valves. The muscular structure was much altered. The case of the cow was similar in origin and character.]

CEREBRO-SPINAL MENINGITIS (ENZOOTIC?).

BY A. B. DANIEL, M.R.C.V.S., LONDON.

THE following cases of this disease have occurred in a stud of horses numbering about 540 within the last two months. In all there has been twenty-six cases, but those appended will serve imperfectly to show the symptoms which were present in a greater or less degree amongst all. I have put a query after the word enzootic, owing to the fact that Professor Axe, of the Royal Veterinary College, has lately been investigating a very similar outbreak near Chelmsford, in addition to which I have heard vague rumours that several cases have occurred in London. Should further experience show that these are of a similar nature, the outbreak will prove to be one instance amongst the many occurring in an Epizooty; but in so far as none of those said to have occurred in London are well authenticated, and certain differences existing between the outbreak investigated by Professor Axe and the one I now take the liberty of bringing to the notice of the profession, the assumption is not warranted that the disease really exists in an epizootic form.

The following are the five cases (out of the twenty-six) which terminated fatally:—

STABLE A.

Case I. a.—At 8 a.m., on the morning of the 24th of February last, I was called to see an aged chestnut mare in fair condition. On the day previous I had seen the mare and found her dull

and off her feed, with slight catarrhal symptoms, but no fever was present; pulse and temperature being normal, I ordered her into a loose-box. I found her down and struggling very much. I learned that the watchman saw her, as he described it, go down like a shot about 3 a.m. I had her turned from the near to the off side when she lay quiet; she was perfectly sensible, but now and again had clonic spasms of the muscles in a manner similar to that seen in vomition. The symptoms were so strange that I immediately suspected poisoning, and as the foreman of the yard had given her a fever-drink, I inquired narrowly, but found that no mistake had been made in the medicine. On further examination, I found that pressure on each side of the spine over the lumber vertebræ caused great pain, and as the mare was quite powerless in the hind extremities, the idea that she had received a severe injury to the spine, possibly fracture, gained upon me. Temperature 101°, pulse 55. Hot fomentations to the loins; Ol. Lini Opii. Evening, 6 p.m., I examined per rectum and found the bladder distended, so passed catheter; urine normal. Turned her on near side, but in a few minutes she commenced struggling to rise, broke into perspiration, and appeared very much distressed, so had her put on off-side again.

25th.—Breathing stertorous, mucous membranes injected, pulse 70, temperature 105°, muscles of the neck rigid, and the head stretched backwards; both legs and tail respond to pricking, showing that common sensation was imperfect, fæces natural, bladder paralyzed; passed catheter, urine normal. Grabbed at the food, but mastication slow and irregular; drank gruel.

26th and 27th.—Little change except in the pulse, which was more frequent and irregular.

28th.—Evidently sinking. Died in the evening in a mad state.

Case II. a.—Bay gelding. Worked on Saturday morning, the 12th March; fed well during the day until the evening, when on leaving the stable for the water, the horsekeeper observed him staggering, and called the attention of the foreman, who ordered him back to the stable, and just as he reached the stall down he went. I saw the horse about 7 p.m., and found him lying

on the near-side fighting with his fore-limbs, the off hind-leg was thrown about irregularly, and each time striking the near hind-foot and fetlock which was lying motionless. Emprosthotonic symptoms well marked, but appears quite sensible; the temperature 101°, pulse 55. The larger blood-vessels of the conjunctiva prominent near the edges of the eyelids, the mucous membrane between these appearing paler than in health. I tied him up in slings, but he was quite powerless. On letting him down I laid him on the off-side; he gave a sigh of relief, fed and drank a little, and seemed much easier; I passed the catheter, and found the urine normal.

13th.—This morning I had the horse turned on the near side; but in a few minutes he commenced fighting with his limbs in a similar manner to the night previous, and appeared very much distressed. I turned him back to the position he had occupied during the night, and with immediate relief to the patient.

Emprosthotonic spasms had ceased, and now there was a tendency to opisthotonos, with rigidity of the cervical muscles. Temperature 100°, pulse 60. Evening little change. Tried slinging, but neck, with fore and hind extremities, powerless.

14th.—Temperature 104°, pulse 85. Mucous membranes injected, breathing laborious, urine ropy and ammonical, containing a number of white mucous flakes. Evening, no change.

15th.—Temperature 106°, pulse 100, irregular; continued about the same throughout the day.

16th.—Breathing stertorous; irregular spasms over the whole surface of the body; mucous membranes intensely injected; pulse weak and fluttering; temperature 105°; evidently sinking. Died in the evening about 6 p.m.

STABLE B.

Case I. b.—March 23rd. Bay mare, seven years old, was seized with similar symptoms. She lay for five days; was then raised by the aid of the slings, in which she remained and was progressing favourably until April 2nd, when Tetanus, in an acute form, set in, arising, I believe, from a rather severe and bad sore, and the cold easterly winds then prevalent. This mare died on the 4th of April.

Case II. b.—April 6th. Black mare, aged, was apparently in excellent health, feeding and well at 9 a.m. At 9.30 a.m. she staggered and fell in the stall. The primary symptoms were similar to the above, but toward evening it was evident that the brain was implicated to a much greater extent. The eyes were heavy and dull, pupils contracted, and perfect inability to keep the head and neck under proper control when raised in the slings. On putting a pail of water before her, she dipped her head to the bottom, and would have quickly committed suicide by drowning had she been allowed. The temperature gradually rose to 100°, and although she made frequent efforts to rise the moment she was got into the slings, she became like a dead thing. The breathing gradually became stertorous, and she died without a struggle.

STABLE C.

Case I. c.—On Saturday, April 9th, an aged grey mare, after doing about three miles at a gentle pace, was observed to be straddling behind, and evidently weak in the hindquarters. She was put in the stable about 9 a.m., fed and drank well till about noon, when she lay down for about half an hour. She stood apparently in good health till about 4.30, when she was observed to stagger forward on the manger, and suddenly fall all of a heap. A short time afterwards I saw her, when she was quite insensible. Breathing stertorous, 22 per minute, pulse 52, temperature 98°, chronic spasms of the muscles of the neck and shoulders, opisthotonos, bowels natural, paralysis of the bladder, imperfect deglutition, mucous membranes natural, tympanitis. Withdraw urine, natural.

10th.—Morning. Neither dunged or staled during the night; has scarcely moved, chronic spasms in fore extremities and neck continuous. Breathing more markedly stertorous, 24 per minute; pulse 100, hard, wiry, irregular; temperature 99°; common sensation in hindquarters complete, tongue paralysed, power of deglutition gone, pupils contracted, urine colour normal, but thick and ropy.

Evening. No change except in temperature, which was now $101\frac{3}{5}°$, and pulse was fluttering and indistinct. She died quietly about 9 p.m.

(*To be continued.*)

Editorial.

CONTAGIOUS PLEURO-PNEUMONIA IN IRELAND.

THE continued prevalence of contagious Pleuro-pneumonia in England is becoming a very serious matter, after the long period during which restrictive, expensive, and harassing measures have been enforced. The disease still maintains its supremacy in a number of centres, ready to extend itself far and wide, with all its former virulency and destructiveness, whenever these measures are in the slightest degree relaxed. It has its stronghold in certain counties—particularly Lancashire and Cheshire—and follows cattle from fairs in the South and East. It is very disheartening to find that after such sacrifices the contagion is still active and powerful, and that it cannot be eradicated. Surely if it could be stamped out in Holland months ago, where it prevailed more extensively than here, there is no reason why, if our action had been as energetic and our measures as well devised, we should have been rid of it as quickly. That there is something amiss with our method of dealing with this and similar contagions, is only too evident, and until things are better managed it is needless to look for freedom from them.

Ireland has, ever since the disease was introduced into that country in 1841, been more or less infected with contagious Pleuro-pneumonia, and has proved a very prolific source of contagion for England and Scotland, but particularly the former. Irish cattle have always been looked upon as most dangerous, and their presence at fairs an almost certain herald of the destructive disease among the cattle they then or subsequently came in contact with. Ireland being an essentially exporting country like Holland and America, should undoubtedly, as we have often insisted, have been put upon the same footing as these countries with regard to importations into England and Scotland. For like other exporting countries, the tendency in Ireland is to ship off infected animals whenever the disease makes its appearance in a cowshed or herd. It is true that there is "An Animals' Order Act," which should do much towards suppressing the disorder in Ireland, and preventing plague-stricken cattle being sent out of the country. But it must be remembered that laws of all kinds are, except one, but little respected by the masses across St. George's Channel; and, besides, it must also be borne in mind that the Act is worked by Boards of Guardians who care little, if anything, about the malady, and whether it exists or not, so long as they have not to pay compensation, their object being to keep down the rates. This tendency has a most pernicious effect, for when cases of the disease are reported they complain and quarrel about the amount of compensation to be allowed; consequently, the inspectors—who are only too often unqualified, incompetent men, employed because they are cheap and pliable—value at as low a rate as possible. It is not to be wondered at, then, that the owners of infected stock, rather than lose money and have to submit to fifty-six days' restrictions, resort to the ever ready and willing "night butcher," who takes the seriously affected off their hands, while those beasts which may be, and most probably are, infected through cohabi-

tation with the diseased, are sent to market, and ultimately across the water to unfortunate England or Scotland.

This unsatisfactory state of matters has been known to exist for at least thirty years, but it has once more been brought to notice by the report of Mr. Hedley, Veterinary Inspector of the Irish Veterinary Department, who has been investigating the extent to which the disorder prevails in the Dublin Unions. From his reports, which appear in the Irish papers, it appears that the disease is quite common in the dairies and cowsheds of the capital; and if so, what must it be in the other towns and country districts? The Guardians of the North Dublin Union were compelled to admit that things must be much worse in the country where the system of inspection was not nearly so perfect as in Dublin, "and large graziers would not subject themselves to restrictions for the sake of a few animals."

The consequence is, that England receives much of this disease from the sister island, where the law is more or less ignored, sanitary measures neglected, and inspection something like a farce. England will never get rid of this pestilence until Ireland is free from it; and the only chance for the latter is to remove the management of the Act in Ireland from the local authorities, and place it in the hands of the Veterinary Department, treating the country in the meanwhile as other unclean countries are, until declared clean. But we have little hope for anything of this kind being attempted. Ireland is treated as a spoiled child, and in the matter of contagious diseases in animals this is as evident as in other matters. We can only insist upon the fact, that in regard to contagious Pleuro-pneumonia England has suffered seriously, and now suffers, from importations of the disease from Ireland.

WHAT IS THE "LOUPING-ILL" OF SHEEP?

(*Continued from page* 111.)

HE further asked that some dried blood might be sent him to Paris, where he might have an opportunity of meeting some of the French savants, and of trying to inoculate a sheep—as, if the disease could be reproduced, he had a clue to the whole affair. He still inclined to think *Bacteria* were at the bottom of the mischief, and thought the mention of ticks pointed in that direction, since *gadflies* are known to communicate *Anthrax*; and in a subsequent letter he adds (after having seen M. Pasteur) that "he thinks highly of my hypothesis that the disease is *bacterial* in origin."

In the article referred to, in the November number, p. 857, a further account is given, through the researches of M. Pasteur, of how *Anthrax* may be produced. Some blood from the poisoned animals is sure to be mixed with the earth in which they are buried, and thus a certain number of germs find themselves in conditions which insure their survival even for years, myriads of germs of the parasite being constantly brought up to the surface by *earth worms*. "The *worm casts* from places where diseased animals had been buried two years before were invariably found to contain an abundance of spores capable of activity, and it is easy to understand how these *casts*, broken up by rain and drought, yield to the wind, and spread over the sur-

face of the adjacent ground, thus scattering abundant germs, which soon give rise to fresh outbreaks of disease." Pasteur strongly recommends burying carcases in poor, sandy, or calcareous soils, unfrequented by earth worms, and never used as pasture.

His views were confirmed by experiments in the farms where an outbreak had taken place two years before, and where the places of interment were still easily recognisable by the increased rankness of the vegetation, as by enclosing some sheep within these places the disease broke out within a week.

M. Chauveau and Toussaint have proved the efficacy of vaccination as a preventive, while Pasteur, in endeavouring to secure fowls from an allied disease by means of inoculation, finds that he has at the same time insured them against *Anthrax*.

We are happily in this district free from *Anthrax Fever* in our cattle or sheep, and have not hitherto considered Louping-ill contagious; but the fact of the possibility of disease being propagated through the agency of the despised *earth worm*, is another instance of the necessity of a minute and scientific search into every conceivable cause.

But while in most cases ticks are found wherever the disease prevails, this is not universally the case. Also, sheep and lambs may be covered with ticks without having the disease, so that it is difficult to believe that their effect can be more than indirect, either as carriers of poison, or as exhausting the stamina of the sheep, and making them more liable to disease.

It is true that lambs are affected long before they can eat, but then it is easy to suppose that the milk may be affected, even though the ewes themselves show no signs of disease. Again, if the ewes and lambs can be covered with ticks in spring without having the disease, how is it, if ticks are the sole cause, that in the occasional cases in autumn very few ticks are to be found?

It is difficult to account for the disease in pigs. The tick theory will not hold, as they are not infested by them. In some cases it may be possible for them to have had access to the offal or carcases of diseased sheep, but this could not have happened in all cases.

There are numerous instances of sheep carrying the disease from one district to another previously exempt. In some cases the disease did not remain; in others the farms became infected for several years, and the disease extended to others. In some of these cases, possibly in all, ticks were also carried.

If *fungi* are the cause, it is easy to imagine the *spores* being carried by the wind from farm to farm, but it is difficult to understand how the disease could be carried from one district to another, except, perhaps, in a latent form, in the systems of the animals.

We quite admit, on the other hand, that the simultaneous appearance of the disease in new districts with the ticks is a strong point in favour of that theory, but the *proof* is still wanting that they are more than a concomitant, or that their bites have more than a predisposing effect. At the same time it is essential that their full life-history and habits should be fully worked out, and the fact ascertained whether or not their bites are poisonous, or the irritation caused by them sufficient to set up cerebro-spinal disturbance.

All agree in thinking that animals not bred on the farm are more liable to the disease when brought to one subject to "Louping-ill," either in spring or autumn; but it cannot be said that the poorest are in all cases more liable than others. We have heard of cases of sheep coming from a healthy district being seized on merely being driven across a farm subject to the disease.

Though there are cases within our knowledge where the disease has now left a farm where it formerly existed, there appears to be no doubt, on the

other hand, that it is extending—as an instance, it is said within the last two or three years to have gone over to the base of the Carter Fell, which had previously been free from it.

The experiences of practical men are most puzzling and conflicting.

In Skye, Argyleshire, and the west coast the attacks in autumn would seem to be worse than in this district.

Some do not think the weather or wind have any effect, others observe that an outbreak may be looked for after cold east winds, and then a sudden change.

One correspondent says it is bad in the autumn amongst fat lambs, especially with frosty nights.

While cattle on the hills are very liable to the disease hereabout, it is curious that in Skye and the west coast the West Highland cattle do not seem to be affected, though the disease is very bad amongst sheep. In those districts the disease has only become known since the introduction of sheep, not many years ago; and according to correspondents, Skye would seem to be worse in those places where sheep have taken the place of cattle, and on land that had formerly been under cultivation and not well laid down, and still deteriorates under sheep, and is covered with moss.

Another correspondent from Skye writes that the disease was so bad in sheep that he has gone back to cattle, and gives them some cake.

Our report would be incomplete without alluding to cases within our own knowledge where the disease has been eradicated, either by cultivation, liming, draining, or burning; but in none of these cases were the sheep wintered entirely on the hill, so that these remedies would not meet the case of purely hill farms, in which it would be impossible to plough, and where it would be difficult either to drain or lime to any extent.

A correspondent in Skye writes that the disease has, in his opinion, been much worse since the farm was thoroughly drained. We presume he means open draining, as, where tile draining has been judiciously done, it certainly appears to have had a good effect in this district, and even open draining is held to be better than letting the land get too rank and sour.

One case has come under our notice in which by a liberal administration of salt, which induced the sheep to eat the grass down very low, the disease was staved off for four years, though ticks were numerous all the time. This year the disease again appeared badly.

In another case a large quantity of gas lime has been spread within the last two years, but there has not yet been time to judge of its effect.

Our thanks are due to those scientific and professional gentlemen who have been already quoted, and who have so kindly assisted us; also to numerous correspondents who have supplied us with information, and especially to the Rev. J. Gillespie, Mouswald Manse, who has most kindly informed us respecting the south-western counties of Scotland.

We are also indebted to Miss Ormerod, Dunster Lodge, Isleworth, whose "Notes on Injurious Insects" should be in the hands of every agriculturist, and who, though not herself working on animal parasites, has been most anxious to give us any assistance, and who suggested our applying to Mr. Moore, with what result has been already shown.

We regret that we have not yet been able to solve the mystery, and that the results of our inquiries are more negative than positive. We have done our best, however, with the limited means at our disposal, to obtain information on the subject, both in regard to *ergot* or other *fungi*, and *ticks*. But because we have not as yet succeeded in proving the case against *fungi*, we cannot admit that therefore the *tick* theory must be held as proved. On the contrary, we are of opinion that *scientific proof* is still wanting in both cases. We trust, however, that we have shown, from the very large area

over which the disease prevails, that it is a subject of very great importance and quite beyond the purse or powers of any one local club to grapple with, and that the inquiry should be continued on a much broader and more scientific basis.

Our inquiries, no doubt, lead to the inference that the real remedy lies in the direction of improving the pastures; but in the case of hill-farms this is a very large and difficult question, and it is only reasonable and natural that both proprietors and farmers should hesitate to take a "leap in the dark," and at once proceed to alter the whole system of hill-farming, without being satisfied that they were proceeding on the right track, and without knowing exactly the enemy or enemies against which they were contending; and if our inquiries should tend in any way to stimulate and advance, as we hope they will, further inquiries, and possibly give some clue or hint as to the lines on which such inquiry should proceed, we shall feel that the Teviotdale Farmers' Club has done wisely and well in having initiated the investigation.

We have hitherto confined our inquiries into "Louping-ill," but we have reason to believe that "Braxy" is even more widespread; and it is certainly not creditable, either to agricultural or veterinary science, that such diseases should be allowed to exist without a full and scientific investigation.

Appendix A.

Report on the Flora of Upper Teviotdale in connection with its Relation to "Louping-Ill" in Sheep:—

Gentlemen,—Acting upon the instructions received from your secretary, I proceeded to the localities indicated, to make an exhaustive examination of the vegetation existing upon certain hill-pastures in the district of Upper Teviotdale, for the purpose of discovering, if possible, the cause of the disease in sheep known by the name of "Louping-ill," which is prevalent on some spots in that district.

The first farm visited was Broadhaugh, on June 17th, 1879. On the following day I made an examination of the uncultivated part of the farm, and also some of the cultivated land, noting every phanerogamic plant seen, and the predominating cryptogams, without detecting anything in the vegetation at that time capable of producing the symptoms of Louping-ill, as there were no plants noted but what are found on healthy places. I was then forced to the conclusion that the disease was not caused by the vegetation in a normal state. Neither did the geological formation differ from that of many places that are free from that disease. Some other cause had to be looked for. Knowing something of the nature and properties of ergot, it struck me forcibly at the time that it was the most probable cause, as from the appearance of the pastures at that time, I had good reasons to believe that ergot would be prevalent in the autumn. The manner in which they were treated—leaving them very rough for winter and spring feeding—being the most suitable way to encourage its growth. Besides, the symptoms of Louping-ill are similar to what would be produced by poisonous doses of that parasite.

Part of Harwood was next visited, and found to be somewhat similar to Broadhaugh, but with more "heather" (*Calluna vulgaris*, *Erica tetralix*, and *E. cinerea*), "stool bent" (*Juncus squarrosus*), and other heath-loving plants.

Skelfhill was next examined, and the altitude being greater—from 847 feet at the house to 1,745 on the top of Skelfhill pen, and about 2,000 feet on Cauldcleuch—some of the lower level plants were missed, and a number of sub-alpine species noted, in addition to those seen on the lower farms (the parts formerly examined were from above 500 to 900 feet above sea-

level), but still nothing likely to induce the disease. The same may be said of Howpasley, where the altitudes of the parts examined ranged from 700 to 1,561 feet. There also a few additional species were observed, and, like Skelfhill, wanting some of the plants that grow at lower levels.

Owing to the weather and other causes, which put a stop to the investigation, I did not get back to the district until July 28th, when Howcleuch, Borthwickshiels, and Harden were gone over, with a like result—viz., without discovering any plants that would be injurious to sheep when in their normal state, or any different species, with one exception—*Meum athamanticum* at Howpasley—from those found on the Cheviot range, and other healthy places on the borders. It must not be understood that no poisonous plants whatever were seen. For instance, *Digitalis purpurea*, which is poisonous, occurred on some spots, but the same plant grows in very much greater profusion on many of the healthiest places.

To make the investigation as complete as possible, I shortly afterwards examined several similarly situated places, which are said to be free from Louping-ill—viz., one of the Cheviots, Bowden Moor, and several hills in Peeblesshire, and, according to altitude, found no material difference in the species of plants from those seen in Upper Teviotdale, but the pastures were eaten closer and very much barer naturally, with the exception of Bowden Moor, which was rougher, and more resembled the infected places.

A second visit was found to be necessary in the autumn, to see if the condition of the vegetation was in any way altered. Accordingly Howpasley was revisited on the 24th of September, and, as I suspected, *ergot* was then found in great abundance. There I gathered "spurs" of ergot from sixteen different species of grasses. All the other farms, formerly examined, were afterwards gone over, and ergot found plentifully on them all, except Howcleuch, where it was very local, and in small quantity, not nearly so much in proportion to the extent of the ground, a large portion of the drier parts producing very few flowering stems of the grasses. On the different places ergot was found on twenty-three species in all, viz. :—

1. *Anthoxanthum odoratum* (sweet vernal grass).
2. *Digraphis arundinacea* (red canary grass).
3. *Alopecurus pratensis* (meadow fox-tail grass).
4. *Phleum pratense* (cat's-tail grass, Timothy grass).
5. *Agrostis vulgaris* (fine bent grass).
6. *Aira cæspitosa* (tufted hair grass, "bull-snouts").
7. *Aira flexuosa* (waved hair grass).
8. *Avena pratensis* (narrow-leaved oat grass).
9. *Avena elatior* (oat-like soft grass).
10. *Holcus mollis* (creeping soft grass).
11. *Holcus lanatus* (meadow short grass, Yorkshire fog).
12. *Glyceria fluitans* (floating meadow grass).
13. *Poa annua* (annual meadow grass).
14. *Poa pratensis* (smooth-stalked grass).
15. *Poa trivialis* (rough-stalked grass).
16. *Briza media* (common quaking grass).
17. *Dactylis glomerata* (cock's-foot grass).
18. *Festuca duriuscula* (hard fescue grass).
19. *Festuca elatior* (tall fescue grass).
20. *Festuca pratensis* (meadow fescue grass).
21. *Triticum repens* (couch grass).
22. *Lolium perenne* (rye grass).
23. *Nardus stricta* (mat grass, "wire bent").

The following grasses were noted, but no ergot observed on them, although

it is probable that most of them are liable to be ergotised at some part of the season or in some years :—

Alopecurus geniculatus (floating fox-tail grass).
Agrostis alba (marsh bent grass).
Agrostis canina (brown bent grass).
Aira caryophyllea (silvery hair-grass).
Aira præcox (early hair-grass).
Avena flavescens (yellowish oat-grass).
Avena pubescens (downy oat-grass).
Triodia decumbens (decumbent heath-grass).
Molinia cærulea (purple melic-grass, "broad or flying bent").
Cynosurus cristatus (crested dog's-tail grass).
Festuca ovina (sheep's fescue grass).
Festuca ovina var. vivipara (viviparous grass).
Bromus mollis (soft brome-grass).

The *Juncaceæ* and *Cyperaceæ*, which form a large portion of the pasturage in some parts of the district, were all, so far as I saw, free from ergot ; but some of the *Cyperaceæ—e.g., arex panicea. C. glauca*, and some others—were very subject to smut (*Ustilago urceolarum*). I am not aware whether the eating of the plants affected with this fungus has any bad effect, but it is possible that it may, as another species of the genus— *U. grandis*—which affects reeds (*Arundo Phragmites*) "has the remarkable property of greatly affecting the health of the labourers employed in cutting and sorting them, producing not only a sense of oppression, but swelling of the head, the formation of vesicles, besides other symptoms, such as are produced by cantharides."

It may here be necessary to explain what ergot is—its appearance and life-history. Ergot is the first, or rather second stage (*sclerotium*) of *Claviceps purpurea* Tul. It is easily noticed when it projects, as it generally does when fully grown, beyond the palæ (chaff-scales) of the plant on which it is growing. The "spurs" are horn-shaped ; sometimes straight, but usually curved ; irregularly cylindrical and grooved. The colour externally is generally purple-black ; internally it is white, sometimes purplish. The spurs vary greatly in size, according to the species of the host-plant (the largest seeded grasses producing large ergot, and *vice versa*), and also on the same plant. I gathered them in Upper Teviotdale varying from less than one-eighth of an inch to over one inch in length from the same species. The ergot when full grown drops out of the chaff-scales, or falls along with the stems of the grasses, amongst which it lies dormant throughout the winter and spring. During the summer the perfect fungus (*Claviceps purpurea*) is produced. The fungi, which grow out from all sides of the sclerotium, are indefinite in number, varying from one to upwards of twenty ; and the least bit of an ergot—according to Mr. A. S. Wilson—will produce a fungus. It (the fungus) has a slender, flexuous stem (*stipe*) varying in length, with a small globular head (*humenium*). When these are ripe the conceptacles containing the spores shoot them out into the air, where they float about, till some of them find a suitable habitat on the germen of any grass florets that are open at the time. Those egortised soon become covered with mycelium, from which the ergot is developed, again to fall and lie till the following summer, when the perfect fungus is produced, once more ready to disseminate its spores. Such is the annual course run by this fungus. Ergot, like many other fungi, besides being reproduced from the spores of the perfect fungus, is propagated by the spermatia or conidia which form its outer covering while in the young and growing state. Much difference of opinion exists as to the kind of season most conducive to the growth of ergot.

Some say a dry season is most productive, others that a wet one suits it best. It appears that moist, warm weather when the *claviceps* is growing, and dry when it is disseminating its spores, will be most apt to produce a large crop. It does not appear to be particular as to altitude, soil, or exposure. On the borders, I have seen it on the sea-coast, extending all through the low cultivated parts of the district, up to about 1,500 feet on Howpasley. Grasses on wet and dry, rich and poor soils are alike subject to it. *Glyceria fluitans* growing in water, and *Nardus stricta* (whether it is growing on the drier parts of the hills and moors or in wet ground) are both very often attacked, especially the latter, which is abundant in Upper Teviotdale. *Lolium perenne* in rich, cultivated alluvial soils, or on dry, bare roadsides, is equally affected. In shady woods or on open moors ergot thrives equally well. It will thus be seen that wherever grasses that are subject to this parasite are allowed to flower and perfect their seeds at the time that the spores of *Claviceps purpurea* are floating about, there it will grow. Some seasons one part of a farm may be bad with it, while another is clear, according to the time and also to the weather when the grasses are in flower on that particular part. As a rule the later flowering specimens are most subject. Crops of rye-grass that are grown for hay do not suffer, as they are too early in flower; but late flowering heads of the same are very liable to be ergotised.

The following extracts showing the effects of ergot support the probability that "Louping-ill" may be brought on by the sheep eating poisonous quantities of it:—"Given in single large doses, it causes local irritation of the parts with which it comes in contact, and subsequently affects the nervous system, especially the spinal cord" ("Vet. Medicines: their Actions and Uses," by Finlay Dunn, V.S.).

From Dr. Wood's "Therapeutics":—"According to Diez, the principal effects of poisonous doses of ergot are, in the lower animals, profuse salivation, dilation of the pupils, hurried breathing, frequent pulse, cries, trembling, staggering, paraplegia, sometimes diarrhœa, sometimes constipation, prostration, urgent thirst, convulsions, and death." "Mr. Samuel A. Wright, in a series of experiments, noted similar symptoms, and that the paralysis was much more marked than the spasms. Late in the poisoning, the heart action became irregular and intermittent, and the pulsation, which had been rapid, became slow and feeble. In some cases, the special senses seemed to be destroyed, and coldness of the surface was a very prominent symptom. Mr. Wright also injected strong infusions of the drug into the torrent of the circulation. Death was in some cases produced in nine minutes, the symptoms being immediate dilation of the pupils, great increase in the cardiac pulsations, paralysis, and convulsions. . . . . Coldness of the surface and paralysis of the special senses were also present in some cases." After quoting some more authorities, Dr. Wood says, "The above summary of the general symptoms caused by poisonous doses of ergot shows that the phenomena are mainly paralytic in their nature."

There is an article in the "Pharmaceutical Journal" of Sep. 6, 1879, "On the Growth and Development of *Claviceps purpurea*," by Mr. W. W. Stoddart. He traced a disease in sheep, by which a heavy loss was annually incurred every autumn, on a farm near Bristol, to ergot. The disease, it will be observed, appears there at a different season of the year—in the autumn instead of the spring. "It took the form of dysentery, inflammation of the bowels, diarrhœa—the evacuations resembling coffee grounds—afterwards succeeded by exhaustion, collapse, and death." From experiments made by Mr. Stoddart, he found that "ergot always attains its greatest intensity at the end of the vegetative period," and "that the medicinal powers of ergot diminish or disappear as soon as the fructifying period commences" (that is, when the

claviceps begins to grow). I applied to several medical and scientific men to try and ascertain if the poisonous principle of ergot was as active and powerful in the spring as it is in the autumn, but failed to obtain any information on that point. Mr. Stoddart's experiments, however, throw a good deal of light upon it, so that in all probability it retains its full powers throughout the winter and spring. It appears to me that in Upper Teviotdale the spring is the only time that sheep are likely to eat it, at least to any injurious extent. So long as the ergot remains on the upright stems of the grasses, sheep will not touch it. After it has fallen, up till the time that the young leaves begin to spring from the bottom, there is little chance for them to pick up much ergot. But when they are forced to bite low for the purpose of getting at the fresh young growth in the spring, then it is hardly possible, judging from the quantity of ergot seen in the autumn, for the sheep not to consume a considerable quantity of it.

On looking over the accounts of many different experiments that have been made on animals with ergot, it appears to be very uncertain in its effects. But I think that may be accounted for by ergot having been used that had not attained its full growth, which may easily happen, as the spurs are not allowed to fall, but are gathered from the plant. The ergot of rye is that generally used for medicinal purposes, which is, according to our best cryptogamic botanists, specifically the same with that occurring so abundantly on the grasses of Upper Teviotdale.

To prove whether or not "Louping-ill" is caused by ergot, or only one of the causes of that disease, further investigation is necessary, especially by a skilled veterinary surgeon. If the infected sheep has been allowed to linger until it dies, I believe it will then be too late—if ergot has been the cause of death—to find it in the stomach. Instead of allowing the animal to die, it would, I think, give more satisfactory results if, as soon as the symptoms of the disease manifest themselves, the subject was killed, and a *post-mortem* examination immediately made. Experiments might also be made by feeding on materials containing a large proportion of ergot, noting its effects, and making *post-mortem* examination afterwards. Further research should also be made in different parts of the country where the disease is prevalent, to see if the same ergotised condition of the grasses exists, and to what extent, and compared with other places that are completely free from it.

If, after making further investigation, it is found that ergot is the cause of the disease, the next thing to do is to find out what would prevent or mitigate the evil. It is evident that by keeping down the number of flowering stems of the grasses, or not allowing them to come to maturity, there would be less ergot. This could be accomplished by eating the pastures barer, especially when the flower stems are being thrown up. Cattle or horses would do that more effectually than sheep. When making the examination, I spoke to several farmers about keeping their pastures barer, but they were of opinion that it could not profitably be done, as they would not have winter and spring feeding for their sheep. But surely some way of not allowing the grasses to perfect their seeds, and still have as much herbage as would feed the sheep in the spring, might be devised. Could not as much land be set apart as would support the whole flocks, with or without artificial food, during the dangerous time—April and May? On this part, by cutting over the flowering stems early in the season before they are fully grown, there would still be ample time for a full crop of foliage before the winter set in. By doing this, the other parts of the pasture could be eaten barer, as the "hained" portion would be sufficient for the spring. If this plan is unworkable under the circumstances, doubtless practical farmers will fall on some way to overcome the difficulty.

In the report of the discussion, reprinted from the *Hawick Express*, the

experiment made by Mr. Usher, Gatehousecote, and Mr. Elliot, Blackhall, are confirmatory of the benefits to be derived from keeping the pastures bare. After suffering great losses from the disease, Mr. Usher put a lot of cattle on to eat the grass as bare as could be, and the disease entirely disappeared from his farm. He recently informed me that Gatehousecote has been clear of the disease for eleven or twelve years, and that in 1878, when his pastures were rougher, he took the precaution to burn them. Professor Buckman in the *Farm Journal* of October 14th, 1879, has an article "On Ergotised Grasses," which he concluded by advising, "as a matter of caution, to examine our meadows before grazing them, as, if ergot be present in any quantity, it may at least be presumed to be capable of mischievous effects. This, however, may be obviated by cutting off the flowery spikes of the grasses by the scythe or more quickly by the grass mower," to be afterwards raked up and burned.

As an easily-tried experiment, I may mention that there is an enclosure near Borthwickshiels, which, if the ergot theory is right, should either be entirely free from Louping-ill, or at least comparatively so, when compared with Harden, close adjoining, there being only a dyke between them. Except on the site of an old loch situated in the middle of this park, there was very little ergot at the time of my visit. There was plenty on the grasses growing in the old bed of the loch, but not, I think, sufficient to produce any serious effects, as the nearly free parts were much more extensive.

From the above it will be admitted that there is strong presumptive evidence in favour of ergot being a likely cause of Louping-ill, particularly when the following facts are taken into consideration:—(1) No different species of plants are found in places where the disease is prevalent from those where it is unknown; (2) the large quantity of ergot found on the infected spots; (3) the similarity of the effects of poisonous doses of ergot to the symptoms of the disease; (4) ergot having been found to produce bad effects on sheep elsewhere; (5) the spring being the only time that sheep have any chance of eating ergot in quantity; (6) and from Louping-ill having been extirpated by eating the pastures bare.

December 24th, 1879. ANDREW BROTHERSTON.

APPENDIX B.

Extracts from Mr. Brotherston's Supplementary Report.

. . . As requested by you, I went to Dykeraw, on September 20th, where I met Mr. Elliot. Owing to the earliness of the season most of the ergot and also the seeds of the grasses had already fallen; but on the part where the disease was worst there was abundance of *Nardus stricta*, one the most liable to be ergotised; while on the healthier and improved parts of the farm, there were very few grasses that are subject to ergot to any great extent.

After seeing Mr. Geddes' letter saying that he would not return to Edinburgh, until the 26th October (which would be far too late), and wishing to have specimens collected of all the plants where the disease has occurred which show any signs of disease, ... I went to Skelfhill and Broadhaugh on September 17th and 18th, ... and found (as I had noticed last year) numerous minute fungi both on the young and *withered* leaves, and brought a quantity of each with me. As the annual conference of the Cryptogamic Society of Scotland was being held at Glasgow at that time I went there, taking samples of each to try and identify them as far as possible. Dr. Buchanan White, F.L.S. (Ed. of the Scot. Nat.), kindly undertook to examine them, and took them home with him for that purpose. He found the greater number of them immature, and therefore unnameable, and said they might

possibly be in a better state in early spring. Both *Scripus cæspitosus* (deer's-hair), and *Eriophorum vaginatum* (hare's-tail cotton grass), two of the earliest "grasses," were very much infested with the immature state of some fungus. *Cladosporium herbarum* was abundant on the decaying leaves of most of the grasses, especially *Nardus stricta*. The *uredo* state of *Puccinia graminis*—(*Trichobasis rubigo vera* or *red rust*) was also common. (See N.B. Agriculturist, September 2nd, 1880. page 609, for a note regarding the last (*Trichobasis*), in which it is stated that Dr. J. E. Taylor, of the Ipswich Museum, writing with reference to an epidemic among lambs, has no doubt that lambs have suffered from blood-poisoning by eating too much of this unnutritious grass (*i.e.*, infested with *Trichobasis*). The stomach filled with millions of the fungus spores, which are probably strongly alkaline, would, he thinks, produce the blood-poisoning. Referring to the above, Dr. White says, "It seems to me, however, that the spores of some allied species are really more or less poisonous."

The most difficult thing with these minute fungi will be the difficulty of testing their effect; but if it can be proven that they are in any degree poisonous, doubtless they will assist in developing any spring disease in sheep, as they are very plentiful. I was sorry that I could not collect ergot in quantity, as at the time that I was there it was mostly fallen; but the ergot of rye is the same species, and so will have the same effect. It is a pity that last year's experiments with it were a failure—indeed they were of no use whatever in testing the effects of ergot on sheep, as the ergot used appears to have lost its strength. . . . . ANDREW BROTHERSTON.

Oct. 19*th*, 1880.

APPENDIX C.

Report on Louping-ill and the effects of Ergot on Sheep.

Having investigated Louping-ill in sheep, and the action of ergot on the same animal, at the request of the Teviotdale Farmers' Club, I have come to the following conclusions:—

Louping-ill is an affection of the brain and spinal cord, of a dropsical nature—*i.e.*, effusion of serum on the surface of those structures, and in the ventricles of the brain, with more or less congestion of the membranes covering the spinal cord and brain.

When the brain is the seat of the disease, sheep die suddenly, or lie in a state of coma or stupor. When the disease is confined to the spinal cord, we see partial or complete paralysis of the extremities, with no symptoms indicating that the brain is implicated; and again, we have the disease confined to that portion of the spinal cord called the lumbar region (the loins) where the large nerves are given off to supply the hind extremities, in these cases the hind legs are only affected, either partially or completely paralysed, depending upon the amount of effusion pressing upon the origin of the nerves, the sheep are able to drag themselves about in search of food.

In protracted cases of Louping-ill I have found, when making *post-mortem* examinations complications such as inflammation of lungs and bowels, which, in my opinion, are the effects and not the cause of Louping-ill. These complications have been the cause of much difference of opinion as to the seat of the disease.

During last spring I visited several farms where Louping-ill existed—viz., Greenbanks, Skelfhill, Falnash, and Harwood. The disease was confined to the hill land; in no cases did I find sheep suffering from it that were on inclosed or improved land. Both sheep and lambs were affected with the disease, the symptoms being identical.

Regarding the cause of Louping-ill the testimony of those persons who have seen much and have had much experience of the disease, is very conflicting.

Some say ticks are the cause, from the irritation of their bite. In some cases I have found these ticks, in other cases they were absent or in small numbers. Indigestion is said by others to be the sole cause—rough, coarse, dry grasses causing the indigestion. Others, again, say that east winds are the cause. In fact, there are plenty of causes given by different people, not one of which do I think is likely to turn out correct.

During the last "Louping-ill" season, I forwarded to Mr. Falconer King two stomachs of sheep and the contents for analysis. One stomach was from a sheep that had died of the disease, the other from a sheep that was bled to death while suffering from the disease. They were both well-marked cases. I also sent the same gentleman, through the kindness of Mr. Hobkirk, Broadhaugh, a living lamb suffering from the disease. I wrote to Mr. F. King several times when I sent him the stomachs and lamb, but have not yet received a reply from him.

I may mention here that I had last June a well-marked case of cerebro-spinal disease in a cow at Chapelhill. The symptoms were similar to those of "Louping-ill" in sheep; and when the *post-mortem* was made, the same lesions were exposed—viz., effusion of serum on the surface of brain and spinal cord, with congestion of their membranes. Respecting the cause of the disease, I have not as yet come to a conclusion that would justify me in giving an opinion.

The actions of ergot on sheep on large doses are—first a depressing, nauseating effect, which is followed in about twenty-four hours by purging; and when continued, super-purgation sets in. As soon as the purging commences, the nausea and depression passes off, the sheep commence eating and cuding (ruminating). In small and frequently repeated doses, the depressing action is not noticed, but the purging action takes place about the third day. These small doses were continued for a considerable time with no other effect than purging being produced.

The sheep experimented upon with ergot were fine Cheviot year-old sheep, in a healthy and thriving condition. They were placed during the experiments on grass of second year's lying, situated on a hillside.

DANIEL WEBSTER, M.R.C.V.S.,
Hawick, *August 23rd*, 1880. Veterinary Surgeon.

THE VETERINARY SURGEONS' BILL, 1881.

WE were able briefly to announce in our last issue that after interviews with Lord Aberdare and the President of the Royal College of Veterinary Surgeons, Earl Spencer, K.G., Lord President of the Privy Council, had determined that what had been drafted as the Veterinary Medical Bill should be introduced into Parliament as a Government measure.

The Lord President and Lord Aberdare considered that certain improvements might be effected in the Bill, and consequently decided to hand it over for revision to the Parliamentary draughtsman. It was found, however, that he could not attend to it for some months, and as no time was to be lost, it was transferred to a very able draughtsman who had drawn several important Bills for the Government. The amended Bill has been forwarded just as we go to press, and we are therefore enabled to publish it. It will be seen that it is greatly improved in shape, and made more complete in several important particulars, and that the designation has been altered from "Veterinary Medical Bill" to "Veterinary Surgeons' Bill."

We earnestly hope that before another month has passed it will have appeared at least in the House of Lords.

The following is the Bill as it now stands :—

Draft of a Bill to Amend the Law relating to Veterinary Surgeons.

Whereas it is expedient that provision be made to enable persons requiring the aid of a veterinary surgeon for the cure or prevention of diseases in or injuries to horses and other animals, to distinguish between qualified and unqualified practitioners;

Be it therefore enacted by the Queen's Most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal and Commons in this present Parliament assembled and by the authority of the same as follows:

Short Title. 1. This Act may be cited as "The Veterinary Surgeons' Act, 1881."

Interpretation. 2. In this Act—

"The Royal College of Veterinary Surgeons" means the Royal College of Veterinary Surgeons incorporated and regulated by a Charter and two Supplementary Charters granted by Her Majesty in the years 1844, 1877, and 1879 respectively.

"The Council" and "the Registrar" mean respectively the Council and the registrar for the time being of the said Royal College.

Penalty on unregistered persons using title of Veterinary Surgeon, etc. 3. On and after the first day of October, 1881, a person shall not be entitled to take or use the name or title of Veterinary Surgeon, or Veterinary practitioner, or any other name, title, addition, or description implying that he is a member of the Royal College of Veterinary Surgeons, or is otherwise qualified to practise, or is a practitioner of, Veterinary Surgery, unless he is registered as a member of the said Royal College.

Any person who on or after the said first day October, 1881, not being registered as aforesaid, takes or uses any such name, title, addition, or description as aforesaid, shall on summary conviction be liable to a fine not exceeding Twenty pounds.

Provisions as to register of Veterinary Surgeons. 4. (1) The register of members of the Royal College of Veterinary Surgeons directed to be made and maintained by Her Majesty's Royal Charter of 1877, shall be styled the Register of Veterinary Surgeons, and shall be kept as accurately as possible by the registrar.

(2) The Council shall cause correct copies of the said register to be from time to time, and at least once a year, printed under their direction and published and sold, and such copies shall be admissible in evidence.

Correction of register. 5. (1) The registrar shall from time to time insert in the registrar of Veterinary Surgeons any alterations which may come to his knowledge in the name or address of any person registered.

(2) The registrar shall remove from the said register the name of every deceased person.

(3) The registrar may remove from the said register the name of a person who has ceased to practise, but not (save as hereinafter provided) without the consent of that person.

(4) Where the registrar has reason to think that any person registered has ceased to practise, the registrar may send by post to such person a notice inquiring whether or not he has ceased to practise or has changed his residence; and if the registrar does not within three months after sending the notice receive any answer thereto from such person, the registrar may within fourteen days after the expiration of the three months send him by post in a registered letter another notice referring to the first notice, and stating that no answer thereto has been received, and if the registrar does not within

one month after sending the second notice receive any answer thereto, such person shall for the purpose of the present section be deemed to have ceased to practise, and his name may be removed accordingly.

(5) In the execution of his duties the registrar shall act on such evidence as in such cases appears sufficient.

Restoration of Name to Register.

6. (1) Where the Council have removed the name of any person from the register of Veterinary Surgeons, the name of that person shall not be again entered in the register except by a resolution of the Council passed under this section, or by order of a court of competent jurisdiction.

(2) The Council may by resolution passed by a like proportion of their number as is for the time being required for the removal of a name from the said register, direct the registrar to restore to the register any name removed therefrom, either without fee or on payment of such fee not exceeding the registration fee, as the Council from time to time fix, and the registrar shall restore the same accordingly.

(3) The name of any person removed from the said register at the request of such person or with his consent shall, unless it might if not so removed have been removed by order of the Council, be restored to the register, on his application and on payment of such fee not exceeding the registration fee as the Council from time to time fix.

Evidence of Registration.

7. A copy of the register of Veterinary Surgeons for the time being purporting to be printed and published in pursuance of the Act* shall be evidence in all cases (until the contrary be made to appear) that the persons therein named are members of the Royal College of Veterinary Surgeons; and the absence of the name of any person from such copy shall be evidence (until the contrary be made to appear) that such person is not a member of the said Royal College. Provided that in the case of any person whose name does not appear in such copy a certified copy under the hand of the registrar of the entry of the name of such person in the said register shall be evidence that such person is a member of the said Royal College.

Notice of Death of Practitioners.

8. Every registrar of deaths in the United Kingdom on receiving notice of the death of any registered member of the Royal College of Veterinary Surgeons, shall forthwith transmit by post to the registrar a certificate under his hand of such death, with the particulars of time and place of death, and may charge the cost of such certificate and transmission as an expense of his office.

Penalty on Obtaining Registration by false representation.

9. Any person who wilfully procures or attempts to procure himself to be registered as a Member of the Royal College of Veterinary Surgeons by making or producing, or causing to be made or produced any false or fraudulent certificate or representation either in writing or verbally, and any person aiding and assisting him therein shall be deemed guilty of a misdemeanour in England and Ireland and in Scotland, of a crime or offence punishable by fine or imprisonment, and shall on conviction thereof be liable to be imprisoned for any term not exceeding twelve months.

Recovery of Fines.

10. Fines under this Act may be recovered as follows, that is to say—in England in manner provided by the Summary Jurisdiction Act, 1848, and with the Summary Jurisdiction Act, 1879, and any Act amending either of those Acts; in Scotland before the sheriff or sheriff substitute or two justices in manner provided by the Summary Procedure Act, 1864, and any Act amending the same; in Ireland

* All future registers should bear the words, "Printed and published in pursuance of the Veterinary Surgeons' Act, 1881."

within the police district of Dublin metropolis, in manner directed by the Acts regulating the powers and duties of justices of the peace for such district or of the police of such district, and elsewhere in Ireland before two or more justices of the peace in manner directed by the Petty Sessions (Ireland) Act, 1851, and any Act amending the same.

A prosecution under this Act may be instituted by the Council of the Royal College of Veterinary Surgeons, but shall not be instituted by a private person without the written consent of the said Council. All fines recovered under this Act shall be paid to the Treasurer for the time being of the said Royal College.

Proceedings of Veterinary Medical Societies, etc.

ROYAL COLLEGE OF VETERINARY SURGEONS.

QUARTERLY AND SPECIAL MEETINGS OF THE COUNCIL, HELD ON THE 8TH APRIL, 1881.

The President, G. FLEMING, in the chair.

Present—Sir Frederick Fitzwygram, Professors Axe, Pritchard, Walley, Williams, and Robertson; Messrs. Dray, Collins, Cox, Batt, Coates, Cartwright, Anderton, Freeman, Woods, Reynolds, Whittle, Harpley, Greaves, Taylor, Blakeway, Dun, Dollar, and Morgan.

The SECRETARY read the notice convening the meeting.

The minutes of the previous meeting, held on the 9th of February, were read and confirmed.

Presentation to the Library.

The SECRETARY announced the presentation to the library, by Mr. Thomas Walton Mayer, formerly honorary secretary to the provincial committee for the obtainment of the original charter granted in 1844, of a number of autograph letters addressed on the subject to his father and himself.

On the motion of Mr. Dray, seconded by Mr. P. Taylor, a vote of thanks was awarded to Mr. Mayer for his presentation.

The letter was read from Mr. Menzies, secretary to the Highland and Agricultural Society, with regard to the pupilage bye-law.

Mr. MORGAN said he fully expected that such a letter would be received, as the matter in question was one calculated to raise contention between the College and the Highland and Agricultural Society. He voted against the motion being passed, because he was anxious to retain the good feeling of the Highland and Agricultural Society; but now that it had been made, he thought it ought not to be rescinded.

The PRESIDENT considered that the action proposed to be taken in the matter was an interference with the privileges of the College. If they were to be obstructed by such a society in any movement they might take to improve the profession, the sooner steps were taken to remove the obstruction the better. There were three courses open to the Council: one was, not to take notice of the letter at all; the other was, to write to the effect that the Council was perfectly competent to manage its own affairs; and the next was, to apologise to the society for taking any steps, without their consent, for improving the profession. It rested with the Council to say which of the three courses should be adopted.

Mr. GREAVES was sure that there was no one present who desired to give offence to the Highland and Agricultural Society. He suggested that some

conciliatory steps ought to be taken in order to induce the Highland and Agricultural Society to come to the same way of thinking as the Council. Not only the majority of the Council, but the majority of the whole profession, was in favour of the proposed practical teaching as an adjunct to the teaching of the colleges.

Mr. P. TAYLOR thought it would be derogatory to the dignity of the Council to retrace their steps in this matter. He deprecated any ill-feeling against the Highland and Agricultural Society; but he thought it was rather dictatorial on their part to tell the Council what course they ought to pursue. He would move that the letter lie on the table until next meeting, in order that the Council might have an opportunity of calmly and judiciously deliberating on the matter. He thought that legal advice ought to be taken on the subject, because he had some doubt as to whether it could be made obligatory on the part of the student to pursue a twelve months' pupilage previous to granting him a diploma.

Professor WALLEY said he was under the impression that Mr. Taylor voted for the motion.

Mr. TAYLOR said he did so vote.

Professor WALLEY said that his great objection to voting for the motion was, because he thought it was not legal. He thought that some steps ought to be taken to prove the legality of it before any action was taken in regard to the letter which had been read.

The PRESIDENT deprecated the funds of the Council being wasted in legal expenses on every little point that might arise.

Mr. DUN supported Mr. Taylor's proposal that the letter should be left for the consideration of the next meeting of Council. He was sure that no important body of agriculturists would differ from the carefully ascertained opinion of a professional body like the Royal College of Veterinary Surgeons, upon such an important technical question as to an apprenticeship not being served by a student before he enters upon a curriculum of study. He could easily understand the desire of the Highland and Agricultural Society to curtail the expenses consequent upon the examination of the poorer students in the western parts of Scotland and other outlying districts. Such increased expenses might interfere considerably with the education of these men, and might prevent them coming forward at all.

Mr. MORGAN proposed, as an amendment, "That the consideration of this letter be deferred till next quarterly meeting, in order that legal opinion may be taken on the bye-law named in the letter received from the secretary of the Highland and Agricultural Society of Scotland."

Professor WILLIAMS seconded the amendment.

Mr. COLLINS moved that a small committee be appointed to consider the letter, and to obtain, if necessary, information with regard to the essential points, and to report thereon to the Council.

Mr. WHITTLE supported Mr. Taylor's motion.

On the motion and amendment being put to the vote, nine members voted for Mr. Collin's amendment, and four against it. It was therefore declared carried.

The President and Messrs. Collins, Dollar, Dun, and Greaves were appointed as a committee.

A letter was read from Mr. J. A. Going, of Broadway, New York, stating that his diploma had been burnt by accident, and applying for a fresh one to be sent to him.

The Secretary was directed to make inquiries, and, if satisfactory, to send the usual certificate.

Mr. DRAY brought forward a motion for the more strict enforcement of Bye-law No. 13, which provided that no motion could be discussed before it

was seconded, nor could any member speak more than once on any one question, save for explanation. He explained his objects in bringing the motion before the Council, the principal of which was to prevent the recurrence of certain irregular proceedings that had taken place at a previous meeting of the Council.

After some discussion, the Council decided to leave the carrying out of the bye-law in the hands of the President.

Mr. John Howat, of Pollokshaws, and Mr. Chisholm, of Bicester, both holding Agricultural Society's certificates, were granted diplomas on the payment of the usual fees.

The SECRETARY reported that a special meeting of the Court of Examiners for the Fellowship Degree was held on the 2nd March, when the following candidates, having produced their certificates, underwent the written, oral, and educational examination, and were admitted Fellows of the Royal College of Veterinary Surgeons :—

Mr. John Ashworth, Rostron, 2nd Life Guards.
„ J. Matthews, 4th Hussars.
„ Jas. Fraser, Newbury, Berks.
„ Wm. Leather, Liverpool.
„ R. A. Stock, Lewes.

New Members of the Profession.

At the several meetings of the Court of Examiners held during the week commencing 31st March, several students received their diplomas, and were admitted members of the profession. Of the total number of applicants, 28 passed, and 2 were rejected. For the second examination 31 students presented themselves, and of these 22 passed and 9 were rejected. For the "First Examination," out of 10 students 8 passed, and 2 were rejected.

Finance Committee.

The SECRETARY read the report of the above committee, which stated that the vouchers for receipts and payments during the preceding quarter had been examined and found correct. The present liabilities amounted to £134 10s. 8d., leaving a balance at the bankers of £330 12s. 2d. He intimated that the handsome contribution of fifty guineas towards the Building Fund had been made by Mr. Dollar, one of the vice-presidents.

This announcement was received with applause.

The next examination for the Fellowship Degree was fixed to take place in July next.

The obituary notice was read, one of the deceased being Mr. J. C. Broad. On the motion of Mr. Coates, seconded by Mr. Dray, both of whom spoke in high terms of the services Mr. Broad had rendered to the Council and the profession at large, it was resolved to send a letter of condolence to Mr. Broad's family.

The Annual Dinner and Meeting.

Messrs. Batt, Collins, Dollar, and Pritchard were appointed as a committee to make the necessary arrangements.

The following gentlemen were elected as scrutineers :—Messrs. A. Broad, T. Dollar, jun., E. Batt, J. Rowe, W. Hunting, W. F. Smith, J. H. Steele, G. A. Banham, F. Ridler, — Bennett (Aldershot), W. Leather (Liverpool), and Mr. Moore, jun.

The SECRETARY read the Treasurer's report and balance-sheet. It showed that, besides the balance at the bankers, it was exclusive of the amount of fees to be received from Edinburgh for the April examinations.

Cheques were ordered to be signed for the current expenses.

The PRESIDENT detailed the interview he had had with the Lord President of the Privy Council in reference to the Licensing Veterinary College for Ireland, and also in regard to the pending Veterinary Medical Bill. He particularly drew his lordship's attention to the Bill, and explained that any person could assume the title of M.R.C.V.S., and so impose upon the public. He left a copy of the Bill with his lordship, who promised to consider it. It has since been decided that the Bill would be put forward as a public measure. He (the President) also explained the necessity for the College obtaining a new building. His lordship confessed that the profession had been greatly neglected in this country, and that he would consider its position. He thought that if a deputation from the College were to wait upon Earl Spencer some assistance might be afforded towards obtaining a suitable building.

General Sir FREDK. FITZWYGRAM said, that in order to test the educational status of candidates as future members of a learned profession, he intended to propose, "That some portion of the first examination be by written papers, and that the examiners be directed to pay special attention to the grammar and spelling of the written papers."

This concluded the business of the quarterly meeting, and

A SPECIAL MEETING

was held immediately afterwards.

The SECRETARY submitted and read the annual report, which was approved of.

Matriculation Examination.

This subject, which was before the last meeting, was again brought up for further consideration.

Mr. DRAY said that although he was present at the last meeting, he had not had an opportunity of stating his views upon the matriculation scheme, for the bringing forward of which great praise was, he thought, due to the President. He cordially supported the motion. Every one who had eyes to see and ears to hear must admit the lamentable deficiency of education on the part of some of the students, and it was therefore imperative on the Council that they should grapple with this all-important question.

Professor WILLIAMS supported the motion. He said he was very deeply interested in the matter, and was of opinion that the Royal College ought to have instituted such an examination long ago.

Mr. COX explained, in reference to some remarks made by him at the previous meeting, that what he wished to convey was that no education, except the middle-class education given to students at the Oxford and Cambridge universities, would suffice for applicants for the Matriculation Examination.

Professor WALLEY said that some time ago a notice of motion was given in reference to this matter, and Professor Williams and himself wrote to the President at the time, stating that they quite agreed that there should be a preliminary examination common to all the colleges. Shortly after that letter was written, Professor McCall, of Glasgow, called on him and put the matter in such a light as to show that the Scotch schools could initiate, amongst themselves, some regulations in reference to the Matriculation Examination. He (Professor Walley) was rather astonished afterwards to find that Professor Williams thought that these examinations should be kept in the hands of the Scotch schools. He did not wish to place himself in opposition to the wishes of the Council. The better a man's preliminary education

was the more easily he could be taught, and the better able would he be to grasp the subjects that were placed before him.

Professor ROBERTSON called attention to the fact that it was proposed to make the Matriculation Examination of two grades, one qualifying for veterinary surgeon, and the other with the ulterior view of qualifying for the Fellowship degree. Taking the example of the Royal College of Surgeons, he thought the qualification should be one and the same; and that the higher grade ought to be a purely professional examination.

Mr. DUN agreed with Professor Robertson as to the inadvisability of having two grades of examination at the entrance of students to the profession. A number of diligent, hardworking, and scarcely sufficiently educated men might not be able on coming up for examination to pass, but after two or three years of study they might prove the brightest and best of specimens, and capable of taking the very highest position in the veterinary profession at some subsequent period.

Mr. GREAVES supported the views put forward by Professor Robertson and Mr. Dun.

After some remarks from Mr. Taylor, who opposed the scheme, Professor AXE suggested, as the most inexpensive process, that the College should come to some understanding with the several schools by which an uniform standard of educational examination could be pursued.

Professor WALLEY suggested the formation of a committee, which should include amongst its members a member of the College of Preceptors, and that the scheme agreed upon should be submitted to the next meeting of the Council.

Mr. P. TAYLOR seconded the motion.

After some further conversation, the motion was carried.

The PRESIDENT warmly thanked the Council for the support he had received in carrying the matriculation motion. The step they had taken would do more to raise the standard of the profession than anything that had been done for a long time.

Mr. WOODS then proposed a motion, of which he had previously given notice, to the effect that the theoretical should precede the practical in the first examination. If he succeeded in his theoretical and failed in his practical examination, then the examiners would have the power to refer him back to his studies for as long a time as they should think fit, and the student could either spend that time at college or with a veterinary surgeon, as he might think proper. At the expiration of the period fixed upon by the examiners, the candidate would then have to present himself for the practical only.

Professor WALLEY, in seconding the motion, said he was of opinion that it was one of the best that had been brought before the Council in reference to the examination of the students, recognising, as it did, the principle he had brought before the Council some time ago in reference to examinations generally, that in the event of not passing any one of the subjects in the examination, such subject should be remitted to him.

Some discussion took place as to whether the change should not be made at once, or a twelvemonth hence.

The PRESIDENT called attention to Bye-law 34 bearing on the subject, and thought it ought to be altered so as to be in harmony with the proposed motion.

Mr. MORGAN and Mr. HARPLEY counselled delay in the matter for another year, until the examiners had had an opportunity of laying their report before the Council.

Mr. WOODS expressed his willingness to have the consideration of the question adjourned.

Ultimately, on the motion of Mr. COLLINS, seconded by Professor WALLEY, a committee was appointed to consider the whole question, and to inquire into the best method of conducting the examinations, and to report thereon to the Council.

The following were appointed members of the committee :—The President, General Sir Frederick Fitzwygram, Professor Robertson, Messrs Collins, Dun, Harpley, Morgan, Woods, and the principals of the different schools ; three to form a quorum.

Some discussion took place as to the case of a member of the College, who had been convicted of fraud in South Africa, and whether he ought not to be struck off the register of the Royal College ; but the consideration of the case was adjourned, in order that the Council might take further legal opinion as to the course they would pursue.

Professor WALLEY called attention to the pupilage bye-law. It had been proposed to obtain legal opinion on the matter, but believed it had not yet been obtained.

The PRESIDENT pointed out that the opinion of Mr. Wolstenholme, Q.C., had been obtained on the subject, and the Council agreed that the bye-law was legal. He did not think that the Council would have passed an illegal bye-law. He also said that if the Veterinary Medical Bill were passed the Council would have to apply for an amended charter to supplement it, and the new charter ought to be drafted in such a manner as to leave no doubt as to its meaning. It would be three years before the bye-law would come into operation.

On the motion of Professor Walley, seconded by Mr. Morgan, it was resolved that the advice of another counsel should be obtained on the point as to whether the Council could enforce twelve months' pupilage.

Mr. DRAY then called attention to the excellent manner in which Mr. Hill (the Secretary) had performed his duties since he had assumed office, and proposed that a bonus be awarded to him.

Mr. COLLINS, in complimentary terms, seconded the motion, and said he only regretted that the funds of the College were in such a condition as not to admit of the bonus being increased.

The PRESIDENT also paid a high tribute to Mr. Hill's industry and ability.

The motion was put to the meeting and carried *nem. con.*

The SECRETARY, on being called in, expressed his thanks for the consideration shown him by the Council.

On the motion of Mr. DRAY, seconded by Mr. P. TAYLOR, a vote of thanks was cordially awarded to the President for his conduct in the chair.

CENTRAL VETERINARY MEDICAL SOCIETY.

AT a meeting held March 3rd, the President (Mr. K. King Shaw) in the chair, Mr. HANCOCK exhibited a tumour measuring about 2¼ inches in diameter, rounded in form, and smooth on the surface, from the superior part of the vagina of a cow.

The PRESIDENT produced a specimen of cake, composed of poppy-seeds, monkey-nuts, and linseed, with some impurities, used for feeding six cows which had suffered from profuse diarrhœa, lost their milk, refused food, became excited and spiteful. Stimulants and change of food was followed by rapid recovery.

Mr. GERRARD related a case of poisoning following the use of so-called rape-cake, which contained charlock or wild mustard.

Mr. SHEATER and Mr. ROWE pointed out the effect of damp and fungoid growths on the food.

Prof. STEEL described the symptoms of poisoning by opium, pointed to the presence of hair and other impurities, and agreed with Mr. Gerrard that mustard was the cause of the mischief.

Mr. GERRARD laid before the meeting a portion of the cœcum of a colt, on the coats of which were a number of parasitic formations, and on the mucous membrane two or three short worms; also a bottle containing a number of worms removed from the cœcum and the stomach, closely covered with bots.

In the discussion which followed, Professor STEEL, Mr. BANHAM, Mr. SHEATHER, and Mr. DANIEL took part.

It was unanimously resolved that the Society "give the British National Veterinary Congress all the support it was able."

The usual formal business was concluded and the meeting adjourned.

LANCASHIRE VETERINARY MEDICAL ASSOCIATION.

THE usual quarterly meeting of the above Association was held at the Blackfriars Hotel, Manchester, on Wednesday, April 2nd, 1881; Alexander Lawson, Esq., President, in the chair. Present—Messrs. Peter Taylor, T. Greaves, T. Taylor, W. Dacre, J. B. Wolstenholme, T. Hopkin, John Lawson, H. Thompson, E. Faulkner, A. Prescott, M. J. Roberts, W. A. Taylor, J. W. Ingram, W. Noar, and R. Ryan, of Manchester; Messrs. C. W. Elam, G. Morgan, R. Reynolds, and W. Leather, of Liverpool; Mr. T. A. Dollar, of London; W. Woods, Wigan; W. Whittle, Worsley; T. Stone, Walkden; J. Litt, Bolton; A. Darwell, Northwich; T. Briggs, Bury; W. A. Briggs, Halifax; Mr. Kirkham, and the Secretary.

Letters were received from the following gentlemen regretting their inability to attend the meeting:—Messrs. H. Thompson, J. W. Hill, R. Roberts, H. J. Cartwright, S. L. Pallin, M. Naylor, and William Broughton.

The minutes of the last meeting were read and confirmed.

Mr. Faulkner proposed Mr. W. H. McCaldon, of Manchester; seconded by Mr. Woods, and carried.

Mr. Locke proposed Mr. A. M. Michaelis, of Stockport; seconded by Mr. P. Taylor, and carried.

Mr. P. Taylor nominated Mr. James Lambert.

Mr. W. Dacre nominated Mr. Ashworth, of Bury.

Mr. Peter Taylor proposed that the discussion on Mr. Hill's paper, viz., "Observations on Health, Disease, and Lameness," be postponed until the next quarterly meeting, and that the paper be printed in the VETERINARY JOURNAL and *Veterinarian*, so that every member might have an opportunity of reading it; seconded by Mr. Faulkner, and carried.

Mr. Locke proposed, and Mr. Greaves seconded, that Messrs. W. A. Taylor, T. Hopkin, E. Faulkner, J. B. Wolstenholme, the President, and the Secretary be appointed as a committee to obtain the return to Council of Mr. Peter Taylor, of Manchester. Carried.

Mr. FAULKNER then read report of proceedings of provisional committee, formed to act with central section with regard to the "British National Veterinary Congress," also rules which had been drawn out by the central section. An animated discussion arose, especially with regard to one paragraph, viz., "The membership of the Congress shall be open only to constituents of the Royal College of Veterinary Surgeons; certain Highland Agricultural, colonial, and foreign veterinary graduates shall be elected as honorary constituents, the method of selection to be determined hereafter." This they considered very objectionable, having a tendency to create a certain amount of ill-feeling in the profession; and the following resolution was proposed by Mr. Thomas Greaves and seconded by Mr. C. W. Elam,

and carried unanimously, "That this Association disapproves of the above clause, which is very objectionable, they not agreeing with anything that is likely to promote discord in the profession. This having a tendency to do so, and therefore if not expunged, we must decline our support to the Congress."

Mr. GREAVES read the following remarks on Influenza:—

Having been honoured by a courteous application from our Secretary, asking me to write a short paper upon the recent epidemic amongst horses in Manchester, adding, he thought that if such a subject was brought forward at the present time it would be serviceable to the members, I have cheerfully complied with his request; and although I have nothing new to advance of any consequence, no fresh idea or treatment, still I am quite of his opinion that the discussion upon the subject, whilst it is fresh in our minds, may bring many facts to the surface, and be a benefit to each and all of us. The present Influenza assumes different phases in different cases. In a large majority of the cases there is loss of appetite, hot mouth and cold ears, accelerated and small pulse, and in some cases accelerated breathing, deranged bowels. This state may continue a few days, and then all the symptoms gradually subside. In some of the cases the loss of appetite and accelerated pulse may continue for a week or a fortnight, and then all go well. There are, alas! some cases, especially of old horses with any chronic disease, where these symptoms do not subside. The case hangs on in spite of your best treatment and the greatest care, and in two or three weeks the patient's breath becomes fœtid and he dies.

I have said it assumes different phases in different horses. Some have swollen eyelids, the aqueous humour in the anterior chamber in their eyes becomes turgid and opalescent; others have no such symptoms. Some have malignant sore throats, and abscesses form in the throats. Some have a great uneasiness in their limbs, pain and inability to stand. Some have considerable abdominal pains, and lie down a good deal. Some have a great tendency to a relaxation of the bowels, and others a tendency to constipation.

The precise or primary cause of this epidemic is, I believe, atmospheric. Some deranged condition in the electrical state of the air, some disturbance or agitated state of the atoms; or the intense cold which seems to have a predeliction to affect mucous tissues, and produces febrile symptoms and more or less prostration. I believe, secondarily, that the blood becomes implicated in the phenomena going on, and through the medium of the blood, in some subtle manner, the whole system becomes contaminated as a consequence.

Now the opinion that I have formed whilst carefully watching and meditating upon the symptoms, progress, and *post-mortem* examinations of these cases is this—that it is our duty to assist nature all we can while she is in the death-struggle trying to rally, trying to throw off this poisonous influence, whatever that may be, that she has imbibed. Now different practitioners take different views of this phrase, "assisting nature." They say they are assisting nature by the abstraction of blood; others consider that they are assisting nature by giving a purgative, causing nature to make an effort to rid herself of disease by this means; others, again, consider that they are assisting nature by applying severe counter-irritation to the sides, throat, and breast. To these views I do not give my assent; but it is not my intention to quarrel with my brother practitioners on the subject of opinion or the treatment of these cases. I say that they are at perfect liberty to enjoy their own opinion and I mine; but what I purpose to do is to give you the simple method which I and my partner have adopted, and which I believe has been attended with a degree of success that has not been exceeded during the prevalence of this complaint in Manchester.

First, it is a matter of very great importance that the horse should be stopped from his work on the very first symptoms of disease. It is attended with the greatest possible danger to persist in working him, exposing him to sweating, then cold and chill, one, two, or three days. After he has become attacked with the disease, have the horse placed in a clean, airy loose-box, clothe him well up with a large warm horse-cloth. He often requires two cloths, and a sack or cloth stuck round his neck. See that the ears are got warm and kept warm: hoods alone will not do this. Give him a small bran-mash, and place a bucketful of bran-tea before him. Give him one or two doses a day of two drams of carbonate of ammonia in ball; if his fæces become a little softened, discontinue this medicine at once, though I have seen many cases benefited very much by spontaneous purging. If the case assumes a serious character, I give an additional diffusive stimulant once or twice a day in the form of a draught, composed of nitrous ether ½ oz., and tincture of pimento ½ oz. Both of these must be made of rectified spirit, not with mythelated spirit. I occasionally give a noggin of whisky once or twice a day. Those cases where the breathing has become accelerated I sometimes apply a stimulating liniment to the sides, and apply my hot clothes out of half-scalding water over the thorax; if the throat is sore I apply my blister ointment to it. If the bowels are sluggish, you may assist greatly by raking, and give an enema once a day. Support them with stewed barley or any tempting diet. Where the prostration is extreme, it is necessary to place slings under them, lowering them gently down upon a good bed of straw a time or two a day, and when they become impatient just put the hooks into the slings and raise them to their feet again.

Some cases that we have had have been so utterly helpless that we have had to do this for two or three weeks. Some have recovered, some have died. One case, the muscular fibres through the body were in such a state of lassitude that when he stood the fetlocks came upon the ground, and suspensory ligament had become detached and sloughed from its connections. Others again, the eyeballs protruded from their sockets; in others the brain seemed to have become inoperative. In those where there is much pain in their feet, remove shoes, and poultice. If it is in their legs I put on patten shoes, and may use evaporating lotions.

It will be gathered from what I have advanced that I do not entertain the opinion that this disease is either infectious or contagious. It is purely and simply an effect produced on the animal by a peculiar condition existing in the atmosphere at the time. I consider that every horse that breathes this atmosphere is liable to become affected. The reason they don't all become affected at the same time is simply owing to their different degrees of susceptibility. This susceptibility again is dependent upon, first, the peculiar idiosyncrasy of the animal; second, the exposure and hardships he is subjected to; third, the sound or unsound state of his vital organs and predisposing general condition at the time. I entertain the opinion that every animal has imbibed more or less of this poisoned air, but the effects produced on the majority are so slight as not to have been felt or observed, and after awhile these horses become acclimatized or vaccinated, as it were, and are then protected, and it has no ill effects upon them, and as a result, the disease dies out in the district where it was at first very prevalent. I will illustrate what I mean. It is well known amongst keepers of bees when a person is stung by a bee for the first time, the pain and inflammation produced is very great. He is stung again and again many times: the pain and inflammation becomes less and less, until at length it has no effect whatever on the individual. This is accounted for by the system having become vaccinated and protected.

Post-mortem appearances. It is our custom to examine every horse after

death, and we find in every case where the patient had laid down a good deal, there is more or less slow inflammation, or a sub-acute disease in the muscal membrane of the stomach and large bowels. In some the pericardium is full of a high coloured or bloody fluid, and in nearly all of them more or less tumefaction of the lungs, or if in a more advanced stage, vomicæ or breaking up of lung-tissue.

In conclusion, let me ask you most seriously to give your attention to two points which are of most vital importance in the consideration of this subject. The one is, What are the best means of averting this disease? The other is, What are the best means to adopt with a view of arresting the progress of the disease at that particular stage when the general fever of the early stage is locating itself and merging into tumefaction of the lungs? This is a moment of supreme crisis, the turning-point, the life or death with our patient. To the first I answer, Take increased care and diligence in keeping the horse warm and attending to his general comfort, his diet, and the proper ventilation of the stables. As to the second, I ask you to give it your serious consideration. I entertain the opinion that severe counter-irritation at this stage often does more harm than good. My friend the late Mr. John Lawson, whose opinion I esteemed higher than that of any other man on veterinary questions, entertained the opinion that iodide of potassium as a medicine had the power or virtue of arresting the progress of disease in this stage. He thought it arrested the disintegration of lung tissue, and also caused absorption of the fluid in the substance of the lungs. On this point I am very anxious to hear your opinion and suggestion.

A cordial vote of thanks was accorded Mr. Greaves for his admirable paper, and for the clear, concise description he had given of the prevailing epidemic in Manchester. In the discussion which followed, almost all coincided with Mr. Greaves as to cause, treatment, etc., but felt that the true pathology of the disease had not as yet been arrived at. The majority of members were of opinion that it was of a Typhoid character and contagious.

Mr. HOPKIN then exhibited a morbid specimen, the history of which is as follows:—A grey mare, of light draught, one of two sisters purchased about three years ago—one two years old, the other three (a peculiarity with regard to this mare was her great antipathy to soft feeding, eating nothing but dry hard corn and hay), the younger one healthy and well up to present time. During the last two years this mare has at times had what we regarded as bilious attacks, coat staring, hide bound, tucked up abdomen, grinding teeth, loathing food, yellow membranes, foul mouth, and pulse from sixty to seventy-five, no increase of temperature of any moment. Three weeks ago, another of these attacks came on, and, in spite of all treatment, she gradually became worse, the symptoms described above being aggravated. I diagnosed the case as one of "ramollissement." Yesterday she was up and down, with an anxious look at her side, most of the day. At night I persuaded the owner to have her destroyed, which was done by stabbing her when down. On making *post-mortem* this morning I was greatly surprised to find the extreme rupture of the abdominal muscles on the left side at the termination of the cartilages of the false ribs, the interior of which is stained with bile; also a rupture of the diaphragm. From the appearance there is no doubt as to this being *ante-mortem*, as any gentleman will readily discern. The liver (a piece of which is here for your inspection) is good, excepting a patchy appearance, light and dark—a condition which Professor Williams describes as denoting previous attacks of congestion. At first one is naturally inclined to ascribe the cause to violence, but the most careful inquiry fails to obtain any clue. Is it possible that it is due to degeneration of the muscular tissue?

A vote of thanks to Mr. Hopkin, also to the Chairman, closed the meeting.

S. LOCKE, *Hon. Sec.*

NORTH OF ENGLAND VETERINARY MEDICAL ASSOCIATION.

THE usual quarterly meeting of this Association was held at the Turk's Head Hotel, Grey Street, Newcastle-on-Tyne, on Friday, March 4th, 1881; the President, Mr. D. Dudgeon, Sunderland, in the chair. Present—Messrs. C. Sheather and G. R. Dudgeon, London; D. McGregor, Bedlington; J. Gofton, North Shields; W. J. Mulvey, Bishop Auckland; G. Farrow, junr., Durham; — Mitchell, Sunderland; W. Wheatley, South Shields; C. Stephenson, H. Hunter, W. Hunter, and the Secretary, Newcastle-on-Tyne.

After the minutes of the previous meeting had been read and confirmed, the following members were elected office-bearers for the ensuing year:—President: Mr. W. J. Mulvey, Bishop Auckland; Vice-Presidents: Messrs. H. Hunter and D. McGregor; Secretary and Treasurer: Mr. E. Elphick.

Mr. J. H. Wilson was nominated for election at the next meeting.

Proposed by Mr. H. Hunter, seconded by Mr. W. J. Mulvey, and supported by Mr. D. Dudgeon, that Mr. Clement Stephenson be nominated for election to represent the Association as a member of the Council of the R.C.V.S. Carried unanimously.

The SECRETARY then read the report of the committee appointed to consider "Cruelty to Animals." The committee having given the subject their serious consideration, unanimously think it would not be advisable to petition the Royal Society for the Prevention of Cruelty to Animals, that more good can be done by the members of the veterinary profession acting harmoniously together in all cases coming under their notice, and to ascertain, if possible, the veterinary surgeon, if any, attending the case, and consult with him as to the history before giving an opinion.

Proposed by Mr. Hunter, and seconded by Mr. D. McGregor, that any trivial case of cruelty coming before any member's notice, that he bring it before the Association, and if thought an improper case for prosecution, a report thereof be sent to the Royal Society for the Prevention of Cruelty to Animals. Carried unanimously.

Mr. C. SHEATHER, supported by Mr. E. R. Dudgeon, as a deputation from the Provisional Committee of the British National Veterinary Congress, in a very able and lucid address, explained to the members the objects of the Congress to be held in London during the present year.

Mr. MULVEY thought we were greatly indebted to Messrs. Sheather and Dudgeon for their trouble in coming so far; that the objects sought to be obtained by the Congress were right and good, and that we ought to give it our cordial support; that the meetings of the Congress might on future occasions be held in May at the same time as the annual meeting of the R.C.V.S., by so doing the members of the profession would be able to attend both meetings.

Mr. STEPHENSON could see no alteration that could be made in the arrangements, and thought the Congress should receive our individual and unanimous support. He had the greatest confidence in the committee, and had very little doubt of its success.

Proposed by Mr. Mulvey, and seconded by Mr. Stephenson, that the Association give its best support to the Provisional Committee of the British National Veterinary Congress. Carried unanimously.

Proposed by Mr. Stephenson, seconded by Mr. Mulvey, and supported by Messrs. H. Hunter and D. Dudgeon, that a hearty vote of thanks be given to Messrs. C. Sheather and G. R. Dudgeon for the very lucid manner in which they have laid before the members the views of the Provisional Committee of the British National Veterinary Congress, also for their trouble in coming so great a distance. Carried unanimously.

Mr. SHEATHER then introduced a very interesting case of fracture of the navicular bone of the off-hind foot. After a very interesting discussion, in which most of the members present took part, a hearty vote of thanks was accorded to Mr. Sheather for his kindness in bringing the case before the members' notice.

Mr. H. Hunter proposed, and Mr. Mulvey seconded, that a hearty vote of thanks be given to our retiring President and Secretary for the very able and impartial manner they had filled their respective offices during the past two years. Carried unanimously. GEORGE ELPHICK, *Secretary.*

AUSTRALASIAN VETERINARY MEDICAL ASSOCIATION.

A SPECIAL meeting of this Association was held at the Royal Horse Bazaar, Melbourne, on March 1st; Mr. J. P. Vincent, Vice-President, in the chair. The meeting was called in consequence of a communication having been received from the promoters of the British National Veterinary Congress, inviting the co-operation of the Association. The Congress holds its meetings in London, in August next, and the subjects to be dealt with are—The Suppression of Empiricism, The Questions of Soundness and Unsoundness, Professional Fees and Etiquette, etc. Assemblies of this description in several Continental countries have been conducive to professional unity and the advancement of the profession in the estimation of the public and the respective Governments, and have stimulated the members to increased scientific labour and zeal for the promotion of its interests; and there is every reason to believe that this one will be attended with similar results. The chairman drew attention to the necessity of veterinary surgeons in these colonies doing all in their power to forward the movement; for in no country more than Australia are the public imposed on and the profession degraded by empirics. It was then proposed that Mr. Graham Mitchell should act as general secretary, Mr. W. T. Kendall as assistant general secretary, and the following gentlemen for their respective colonies, viz., Mr. J. Stewart, M.L.A., N.S.W.; Mr. T. Chalwin, S.A.; Mr. J. Irving, Queensland; Mr. A. Park, Tasmania; and Mr. Michie, New Zealand.

SOUTHERN COUNTIES VETERINARY ASSOCIATION.

THE first meeting of the society was held at the Greyhound Hotel, Croydon, on March 30th, 1881, when the President, G. Fleming, Esq., delivered his inaugural address, and the following gentlemen were present—Visitors: T. Greaves, Esq., Manchester; W. H. Steel, Army Veterinary Department; H. K. Shaw, Hackney, President of the Central Veterinary Medical Society, London; also Messrs. Boswell, Sydenham; Jarvis Burwash, J. D. Barford, Southampton; J. Gillingham, Croydon; — Gibbs, Bromley; H. Hogben, Folkestone; C. H. Hogben, Dover; T. F. Hogben, Lyminge, Hythe; T. G. Samson, Mitcham; W. Emery, Bramley, Guildford; W. A. Edgar, Dartford; P. Gregory, Tunbridge; F. Farrance, Eastbourne; H. J. Surmon, Belvidere; H. C. Legge, Dorking; F. R. Ingersoll, Lewisham; W. Covency, Headcorn; R. A. Stock Lewis, W. M. Rock, Chelsfield; P. A. Rock, near St. Mary's Cray; T. P. Ingersoll, Lewisham; T. Hounsell Chertsey, Cawthron, Hadlow; E. A. Hollingham, Red Hill; G. A. Banham, Brown Institute; and J. B. Martin, Rochester, Hon. Sec.

The PRESIDENT, in his opening address, said that as that was the first meeting of the Southern Counties Veterinary Association, he thought it right in the first place to thank the members for the honour they had done

him by electing him their President. He valued the honour highly, and would always have the welfare of the Association at heart. He hoped it would become one of the most powerful and flourishing in the kingdom. He was glad indeed to have the opportunity of expressing the extreme gratification he felt at welcoming into the world an association which had been required for so many years. There was no doubt that the Southern Counties of England should have been represented many years ago by an association of the profession, and that the want of that representation has been felt. They were aware that the profession did not exist as a body or as a corporation until the year 1844, when a royal charter was obtained which gave them a professional status in the country. For reasons which they need not go into then, the corporation did not fulfil all the requirements of the profession, nor the expectations of those who originally applied for the charter of incorporation, and very shortly afterwards an unfortunate disruption took place, which for all practical purposes rendered the profession inert as a body. Professional progress, which it was anticipated would have been rapid and sound, was impeded, and he might say that it retrograded, because they found that with two divisions—one strongly antagonistic portion acting against another—it was impossible to make proper progress. In this condition things remained until a recent time. The Royal College certainly did something, but its more important functions remained in abeyance. This was unfortunate so far as the profession in this country was concerned, the profession on the Continent being in a more favourable position. There, as they knew, it was taken under the 'paternal care of Governments, was fostered for the benefit of the country and at the expense of the country, and therefore the professional men were in the hands of Government. But in this country much was left to individuals, and they had to maintain their own footing. Their Corporation was not recognised, and owing to the unfortunate disunion which existed, it could not be recognised. The Highland Society of Scotland issued certificates which were considered equal to the diploma of the Royal College of Veterinary Surgeons. That was the case until recently, and they all knew how much it had militated against the profession. It might be said that until the year 1865, the profession was not recognised by Government, but the country was then awakened to its importance by the sudden outbreak of Cattle Plague. The awakening was rather abrupt, but it really aroused the country to a sense of the value of the profession. The Royal College was for a long time in the hands of the teaching school. The profession was extremely apathetic, so for all practical purposes it was in the hands of the Royal Veterinary College of London. It must be confessed that a great deal of jealousy existed on the part of the school, but that was only natural, as on the Continent the schools were recognised in each country as the head of the profession. If the Royal College looked upon itself in the same light it was justified in doing so. Where the interests of only a few individuals were affected, it was likely that they would clash with those of the majority. The opposition offered by the school itself at the beginning was very serious, but it gradually came to an end, an independent spirit began to be shown, and the profession felt itself growing stronger. The introduction two or three years ago of the system of voting by voting papers for members of the Council gave the death-blow to any party influence, and progress was made until at the present time the interests of the profession were entirely represented at the Council. After alluding to the position of the Highland Society of Scotland at the time to which he was referring, the speaker said that two or three years ago an attempt was made to close the breach between the opposing parties, and to get rid of the disunion which was so opposed to dignity and progress. He was glad to state the union had been

happily accomplished, and that now for the first time in its history the profession was united in the three kingdoms. (Hear, hear.) This was so far satisfactory, as it gave them an immense amount of power and influence, both for their own interests and the interests of the public. This Southern Counties Association was therefore born at a most auspicious period, and its objects were the cultivation among the members of a scientific and friendly spirit, and the promotion of professional unity. It was well known that practitioners who did not frequently meet each other were very often unfriendly, but the more frequently they met the more friendly they became. All important scientific questions would be discussed at their meetings, and peculiar cases met with in private practice described. They would assemble not only for the dissemination of knowledge amongst themselves, but they would also add to the general bulk of professional knowledge. Both from a social and professional point of view such associations were very important. They had another important bearing—they were now found to exercise a very powerful influence on the general welfare of the whole body. Questions were discussed by them which could not be properly discussed by two or three individuals. They thus exercised an influence which must tend to the advantage of the whole professional body. It was impossible otherwise to properly consider scientific and practical questions, or those which were of a political nature. The Council had of late moved most energetically in matters which must affect materially our progress, and they found themselves immensely supported by the weight of these associations, every member of which, throughout the kingdom, had now power to exercise a voice in the election of representatives. The Council had been moving in a most laudable endeavour to promote the scientific and general education of the students, and it would require the powerful aid of that and other associations to enable them to achieve the result they hoped for. A candidate for a diploma should possess a certain amount of practical knowledge —which had never been obtained at any school—by serving a certain term of pupilage with a qualified practitioner. The wisdom of that proposition had been disputed in certain quarters, but he was sure that any one who knew anything about it would agree that, according to the existing system, many students were wanting in a knowledge of the minor details of the profession. Those who knew how the teaching was conducted at the schools, and how the teachers were hampered through want of time, would be the first to acknowledge that it was impossible to teach a student everything he should know appertaining to his profession. Ninety-nine per cent. of those informed on the subject were in favour of the scheme for imparting the knowledge that was so important to the profession, by causing students to serve a certain period of pupilage. That was one of the things the Council had taken into consideration. The question of matriculation had also come before them. One school, moved by a generous impulse to raise the standard of general education, might put on a fair matriculation test to those who applied for admission, but persons rejected would go to another school where the test was much inferior, or, perhaps, did not exist, and there they would be admitted. It had long been felt that the Royal College should take this matter into its own hands. It was impossible that the profession could attain its proper position until the members were well educated, and therefore he said that the Royal College of Veterinary Surgeons must take up the subject of matriculation, and by raising the standard of education raise the profession in the estimation of the public. He had a piece of good news to communicate to them. A number of persons in Ireland, who were not members of the profession, wished to establish and had moved for another school. They wanted a grant of money—£10,000 or £20,000—and they wanted to have power to confer diplomas. They wished

to have the money, but they wished to have nothing to do with the Royal College. It was felt that another licensing body would be death to the profession. They could not prevent the Irish people from opening a school, but they must oppose to the utmost the application for licensing powers. He heard that Dr. Lyons, M.P., was the leader of the movement in favour of this Irish school, and that he had formulated a scheme which was likely to be acceptable to the Lord Lieutenant. Feeling very strongly on the subject, he (the speaker) wrote to Earl Spencer requesting a private interview, and this was granted. It was very satisfactory so far as the veterinary profession was concerned. Having heard Earl Spencer's views on this question, he thought he might mention the absency of protection from unqualified men, and mentioned that Lord Aberdare had stated that he intended to call upon him and Mr. Mundella. Earl Spencer was very much surprised to hear that unqualified men were allowed to practise. Another point he referred to was a building for their college. His lordship was rather astonished to hear that the profession was so poor. He asked if much money would be required, and his words led him to believe that they had reason to hope for assistance from the Government. A few days subsequently he heard from Lord Aberdare that it had been decided that the Veterinary Bill should become a Government measure. That was a most successful piece of business. Not only had the success of the Bill become assured, but by its adoption by Government an importance had been given to it which no private measure could have attained. He thought this news was enough alone to announce at the first meeting of the Association. He had not been able to prepare a proper address, but he believed that this piece of news would compensate for its absence. There was still, however, an immense amount of work to be done before they could put the profession in the position in which he would like to see it, but by putting their shoulder to the wheel, and by each member doing his utmost, they would attain all that they wished. Their success was now becoming a matter of increasing importance, and their profession was rising in the public estimation. It was not merely the science of curing disease, it was the science of preventing disease. It was a sanitary science of great public value. The success of the medical profession had been attained mainly by the efforts of private individuals, and if they worked as they had done they would achieve similar results. He saw no reason why they should not hold such a place, and work with the medical profession towards the prevention of disease among men and animals. Great public questions were involved in that subject, and he was only sorry the veterinary profession was at present so backward in its study. They had scarcely a name of note among them, but this was only because they had left much to chance, and had been content to occupy a very humble and insignificant position. They belonged to a noble profession, one which had strong claims upon humanity, and which certainly had a great influence upon the public welfare. It could not be kept in the background, and he felt sure that the Association would help to raise it to that position which it must ultimately occupy. (Applause.)

Mr. STEELE said it seemed to some members of the profession, among whom he was included, that the time had arrived when they might assemble the profession at a congress. The idea has been before the public for some little time, and in the endeavour to promote the success of the scheme certain measures had been taken, one of the most important of which was to bring it forward at the meetings of the various medical associations. The idea of a congress was derived from observations of the proceedings of the profession in other countries. It was a well-known fact that in Continental countries congresses had been held, and that many of them had been attended with the greatest success. They were not only successful as regards

the number of members present, but also in having brought a considerable influence to bear upon their respective Governments. By this means Government influence was crowned, and the welfare of the profession was promoted; and it seemed to them that the time had arrived when the veterinary profession in this country might do something in the same way to establish themselves as a united body, and if they could succeed in promoting a congress they would show the importance of the profession. They desired that this congress should be representative of the various parts of the British Empire, and should be a national veterinary congress. They had obtained the assistance of gentlemen in England, Ireland, and Scotland, and they had written to gentlemen representing the Colonies, and had thus been enabled to form a committee which they styled the Committee of the National Veterinary Congress. It had been decided that this committee should take steps for the formation of sections, by whom certain matters should be arranged. One section was for Ireland, another for Scotland, another for Lancashire and the North of England, and another, the central section, was assembled in London. Meetings had been held, and various questions had been decided. It had been arranged that the meeting of the congress should be held in London this year, and the month of July had been fixed upon. The days now under consideration were the 13th and 14th of that month, and it had also been decided that if they should have sufficient matter to interest the members, the congress should be continued for another day. Certain important subjects would be discussed, as each section of the professional committee has been requested to take measures for the preparation of a paper on one subject. The papers would be prepared and distributed among the gentlemen who had entered their names as members before the meeting of the congress. They could make notes upon the papers, and as there would therefore be no necessity to read the papers, much time would be saved. The discussion would at once be commenced and carried through without loss of time. It had also been decided that minor matters should be admissable at the congress, that papers should be submitted, and the opinion of the majority taken. Members of the Royal College of Veterinary Surgeons would be eligible as members of the congress, and other persons interested in the subjects would be able to take part in the proceedings. The expenses would be defrayed by a subscription of one guinea from each member. The question of cost was one they had scarcely been able yet to decide, but it would not exceed the sum named. Any surplus that might remain after the expenditure necessary for the working of the congress, would be devoted to the building funds of the College. The question had been discussed at a majority of the meetings of the associations throughout the length and breadth of the land, and it was with very considerable satisfaction they found that the southern counties would now be represented by an association. The project had been received with enthusiasm in most cases. He brought the matter forward because it was thought that it would be a very great advantage to have the support of the officers and members of the Southern Counties Veterinary Medical Association.

The CHAIRMAN remarked that the Veterinary Congress at Brussels was a great success. Most important subjects had been written upon by selected men belonging to the profession, and copies had been distributed among the gentlemen attending the congress; so that when they met each member had already read the paper and had considered it, and if he had any remarks to make he made them. They generally spoke from written notes. At the opening meeting the King sent his compliments, and trusted that its deliberations would be of advantage to the country. An important functionary acted as chairman. A great number of the gentlemen of Belgium attended the congress, and the results of the discussions were forwarded to the Home

Minister, especially those which had relation to legislative measures. He approved of the suggestions made by Mr. Steele.

Mr. GREAVES said the matter had been brought before such associations as those of Lancashire, Liverpool, and Yorkshire, and was received very favourably, a resolution being passed that they should give all the assistance in their power. In some points they did not see their way to assist the Central Association. He for one should urge those present to show an interest in this matter. In 1867 a congress emanating from such associations as these was held in London. He considered that they had been of great value to the veterinary profession both in promoting harmony and science, and in regard to political matters. He had been told that these associations had no business to introduce politics, but it was in a great measure owing to these associations that the President had been enabled to obtain power to apply to Parliament for a Bill. With reference to teaching the students, the chairman had touched upon an important subject. They had colleges with a larger number of professors than ever before, and students were taught more thoroughly than ever before, but there was a defect somewhere, for the students emanating from the colleges were not what they ought to be. One of the London professors told him that although they had a large number in the colleges they turned out a less proportion of practical men now than before; and another authority had stated that half the young men applying to him could not tell the lame leg of a horse. Less practical knowledge was acquired in the colleges than was formerly the case, and it was on that account that the President wished to introduce the system of apprenticeship. He agreed with the suggestion, but he believed it would be opposed, and by the very men who ought to be delighted to adopt it. He thought that all the professors should be glad to have an adjunct to their teaching. If a student did not have practical teaching nothing could make him a veterinary surgeon. He was certain they would do important service by establishing a system of apprenticeship or pupilage. As regarded the congress, it had been objected in the north that veterinary surgeons who had to travel two, three, or four hundred miles to London and leave their business for a time, ought not to be put on a footing as those living in or near London. It would cost people living in Manchester £5 to come to London and stay for two days. They thought it was unfair, and would prevent many from attending who otherwise would do so. He thought also they ought to fix their time according to the date of the meeting of the Council. The Council would meet on the first or second Wednesday in July, and if they arranged the Congress about the same time members would attend the meetings.

Mr. BANHAM said they could not see their way to make a difference in the charge. They could not make a scale of charges for subscribers, but he hoped next year there would be another congress which might be held in Manchester, Leeds, Edinburgh, or some other town in the north.

The resolution in favour of a congress was then carried unanimously.

Mr. STEELE having replied,

The CHAIRMAN, after remarking on the abundant material for discussion and reflection that could be furnished by this association, stated that the next meeting would be held in June, not alone for the discussion of special subjects, but all topics of interest to the profession should be taken up and discussed.

It was resolved that the next meeting should be held at Tunbridge Wells, and that the day should be fixed to accord with the meeting of the Bath and West of England Show, arranged to be held this year at that town.

Mr. GREAVES proposed a vote of thanks to the chairman.

Mr. BURFORD seconded the motion, which was carried unanimously.

The CHAIRMAN, in returning thanks, referred to his advocacy of the protection of their title, and remarked that if they thought so little of their profession as to allow any man to adopt this title, they must be a mean-souled lot. If they belonged to the profession they had every reason to protect it. He had come to the conclusion that the Bill would be introduced into Parliament and would become law, but even at the last Council meeting cold water was thrown upon it, and a discussion arose as to the necessity for retrospective action. They would be gratified to learn that Earl Spencer, after consulting Lord Aberdare, came to the conclusion that the clauses of the proposed Bill were not sufficiently stringent. He said there were loop-holes by means of which it might be evaded, and it was therefore handed over to the Parliamentary draughtsman. When it became law one of the great objects of his life would have been achieved. It would be the first time in their history that they had been acknowledged by the Legislature.

The business proceedings were then brought to a close, and the company afterwards sat down to an excellent dinner. J. B. MARTIN, *Secretary.*

NEW MEMBERS OF THE PROFESSION.

AT the several meetings of the Court of Examiners of the Royal College of Veterinary Surgeons, held during the week commencing 31st March, 1881, the following students from the Royal Veterinary College received their diplomas, and were admitted members of the profession:—

Mr.	Thomas B. Cockshoot ...	Manchester.
„	Thomas A. Huband	Wingmoor, near Cheltenham.
„	Walter F. Day	Weymouth.
„	George Edmundson	Bedale, Yorks.
„	*William James Williams ...	Oswestry, Shropshire.
„	William Londen	Athy co., Kildare
„	Edward H. Wand	Farnsfield, near Southwell.
„	*Arthur Broad	Maida Vale, London.
„	*Robert Samuel Barcham ...	Boston, Norfolk.
„	John Varney	Winslow, Bucks.
„	*John S. Wheatcroft	Rotherham.
„	*John Penberthy	Redruth, Cornwall.
„	*John A. Bown...	Wells, Somerset.
„	R. E. L. Penhale	Holsworthy, Devon.
„	Charles C. Clark	Reepham, Norfolk
„	Charles E. Cockram	Weymouth.
„	*E. Wynne Williams	Dolgelly.
„	T. C. Fletcher	Sheffield.
„	Alfred J. Hickman	St. John's Wood, N.W.
„	*Alfred Charles Wild	London.
„	*Henry Charles Harrison ...	Leigh, Lancs.
„	John Thomas Holmes... ...	Bourne, Lincolnshire.
„	*Thomas Pottinger	Regent's Park, N.W.
„	John R. Pilkington	Allerton, near Liverpool.
„	Harry M. Rule...	Saffron Walden.
„	Enoch Green	Brierley Hill, Staffs.
„	*William Davidson	Timahoe, Queen's co.
„	William T. Simmons	Boston, Mass., U.S.A.

The following students of the Royal Veterinary College passed their "Second" Examination at the meetings of the Court of Examiners, held April 4th, 5th, and 6th:—

Mr. John H. Penhale.	*Mr. John W. Edwards.
„ Henry J. Skinner.	„ *James Bolton.
„ Edward Lawrence.	„ *John Smith.
„ *Alfred H. Archer.	„ Sidney H. Slocock.
„ *T. H. Greatbatch.	„ Sidney T. D. Symons.
„ Herbert W. Pickworth.	„ *John Buscomb.
„ Frank Glover.	„ *Richard Barker.
„ *Henry Edgar.	„ *Harry A. Young.
„ *John S. Hurndall.	„ Charles Pack.
„ †Henry Sumner.	„ *James B. Gresswell.
„ *Richard McRaith.	„ Thomas Down.

The following students, also of the Royal Veterinary College, passed their "First" Examination on April 7th :—

Mr. Alfred A. Phillips.	*Mr. John Morton.
„ T. H. Higgot.	„ *Martin Robinson.
„ *L. J. Blenkinsop.	„ Charles F. H. Skelton.
„ Samuel Cliffe.	„ Walter Bugg.

ROYAL VETERINARY COLLEGE.

THE quarterly meeting of the General Purposes Committee was held on Monday, April 11th ; Mr. Berens in the chair.

It was ordered that in future a statement of the accounts of receipts and expenditure should be printed and circulated to each member of the committee previous to the meeting to which they would be submitted.

Thirty-one new subscribers were elected.

From the Principal's report it appeared that a diminution in the number of new subscribers had taken place during the last three months, also in the number of horses admitted into the infirmary.

The diseases from which the horses suffered were as follows :—Injuries, including wounds, 63 ; lameness, 62 ; diseases of the skin, 21 ; Colic and other affections of the bowels, 10 ; Influenza, 9 ; diseases of the chest and respiratory organs, 6 ; debility, 4 ; Bilious Fever, 1 ; Strangles, 1 ; Glanders, 1 ; and Nasal Gleet, 1.

It was ordered that the charge *per diem* for the keep of a horse be reduced from 4s. to 3s. 6d.

With regard to the "Cheap Practice," no material increase had taken place in the number of new cases. A large proportion of the patients had come in a second or third time, and several operations of an important kind had been performed.

With a view of instructing the students in the use of anæsthetics, it was proposed by Mr. HARPLEY, and adopted, that chloroform be more frequently used.

At the Royal College of Veterinary Surgeons, of 30 students who presented themselves for the Diploma Examination 28 passed, 12 with Great Credit ; for the Second Examination, of 31 students 22 passed, 1 with Very Great Credit, and 12 with Great Credit ; and for the First Examination 10 students presented themselves, 8 passed, 3 with Great Credit.

The report of the sub-committee appointed in January to consider communications received from officers of the College relating to their duties, and the amount and sources of remuneration, stated that a portion of the incomes of some of the professors was derived from fees received for the examination of animals the property of non-subscribers.

* Marked thus passed with Great Credit.
† Marked thus passed with Very Great Credit.

It was decided that all such fees should become the property of the College, compensation being given to those officers whose incomes would be diminished.

It was resolved that the General Purposes Committee should meet monthly, the next meeting to be May 20th, at 3.30 p.m.

At the conclusion of the last lecture of the course for Winter Session 1880-1, Mr. PENBERTHY, on behalf of the members of the Hippo-pathology Class, rose to convey to its teacher some expression of their esteem of his ability and fitness to fill the position he has so recently assumed. And since the clinique of our schools has of late been so lowly estimated and disparagingly spoken of by some members of the profession, it has been particularly requested that this opinion of students, so near completing their college career, and thus well calculated to judge, should be generally known, as also in justice to the gentleman to whom the following remarks were specially directed—

"Professor Robertson.—Sir,—My fellow-students who intend presenting themselves for their final examination next week, thinking this, your concluding lecture, a fitting opportunity, have imposed on me the pleasant duty of asking you to accept our acknowledgments of indebtedness and our thanks. I, sir, have only to regret that any words of mine can but very inadequately express our sentiments of obligation and esteem. Twelve months since we were deploring what we then thought to be an irreparable loss, but times change and we change with them, and now we find ourselves reviewing the interim with pleasure and satisfaction. Your untiring exertions for the advancement of our studies, your warmth and geniality to us individually and collectively, and your unwavering kindly bearing towards us at all times have been thoroughly appreciated by us and have most materially conduced to render this, we trust our last session, a very pleasant epoch in our college career, to be remembered and reflected on with satisfaction throughout our lives. Your scientific attainments, your large practical experience, and the prodigious amount of work accomplished by you, have secured our lasting admiration; and although, as you remarked in your opening lecture in October last, that 'we all cannot be great and shining lights to guide and dazzle humanity,' let us hope your example will stimulate us 'all to be earnest, patient, and enlightened workers in the field of observation.'

"Your love, sir, for our profession has been patent to all of us, and we congratulate ourselves that it has now placed so prominently in its foremost ranks one in whom we know her honour will rest unsoiled, and whose every effort both in college and in Council will tend towards her elevation both socially and scientifically.

"Although we hope so soon to be classed among her passed *alumni*, we still feel an interest in our *alma mater*, and we rest assured that she is advancing to that position which, as a teaching establishment, she should enjoy. We cannot allow this opportunity to pass without making known to you that we are alive to certain reforms, long required, which are now taking place. We would especially refer to relation of teacher and student, as we attribute much of the beneficial change to that frankness of disposition you have ever exhibited to each and all who have had occasion to seek your advice or assistance, as well as your endeavours to apportion to the scholastic and 'business matters' of the college their proper relative importance; and last, though far from least, we cannot lay stress enough on the great advantage we have derived from those facilities you have afforded us for actual manipulatory work both in the stall and the operating shed.

"And now, sir, in tendering our warmest thanks, allow us respectfully to congratulate you at the termination of this your first session, on your eminent success as a teacher.

"In the issue of the coming struggle we each have a personal interest which is undeniably supreme, but next and close to that, sir, is a consideration for your feelings, and there is not a man of us who does not feel and say with me, 'I hope we shall each get through for our own sake and that all will get through for Professor Robertson's sake.'

"With these imperfect expressions of our esteem, will you be good enough, sir, to accept our best wishes for your future, the prospect of which is so bright?"

Presentation of a Testimonial to Mr. Steel.

At a meeting of the students of the Royal Veterinary College, held in the Lecture Theatre, on March 25th ult., to which Mr. Steel had been invited, Mr. Bartrum on behalf of a very large number of the present students, after speaking in highly eulogistic terms of that gentleman, and expressing the sincere regret of all at his resignation, presented an address signed by 160 students, enclosed in a chaste oak frame delicately rimmed in gilt, accompanied by a handsome gold lever keyless watch, bearing a suitable inscription.

Army Veterinary Department.

Gazette, March 29th.

VETERINARY DEPARTMENT.—Veterinary Surgeon on probation John Cooper to be Veterinary Surgeon.

Gazette, April 11th.

VETERINARY DEPARTMENT.—Veterinary Surgeon J. E. Elphick retires on temporary half-pay; Veterinary Surgeon Mr. J. Hartigan resigns his commission.

Parliamentary Intelligence.

House of Commons.—April 7th.

LORD CLAUD HAMILTON asked the Vice-President of the Council if his attention had been called to the increasing prevalence of Glanders amongst horses in the metropolis; whether there is any regular inspection of stables by veterinary surgeons or other competent persons acting under the orders of the Privy Council; if it is not a fact that the public drinking-troughs are a source of infection; if it is not the case that the horses in night cabs are especially infected, and whether it would not be possible to compel all veterinary surgeons, under penalties, to report to the Privy Council the existence of every case of this disease that comes under their notice.

Mr. Mundella said that although the return showed 601 cases in 1879, and 1,142 last year, the Veterinary Department was of opinion that the increased number of cases reported was solely due to the Act of 1878 being more rigidly enforced by the local authority, and not from any increase of cases. With regard to the second question, the duty of inspection devolved on the local authority, and he had no reason to think that it was not efficiently discharged. Drinking-troughs were one means by which the disease might be spread, but these were a most humane provision, and the benefit far exceeded the risk. He was sorry it was not possible to enforce the suggestion in the latter part of the question.

Obituary.

THE death is announced of a most respected member of the profession, Mr. James Moon, of Kingston-on-Thames, Surrey. Mr. Moon graduated in 1839, and for fifteen years held the office either of Member of Council or Vice-President of the Royal College of Veterinary Surgeons. Quiet and unassuming, his presence at the Council meetings was always welcome, as he belonged to the party of progress, and always voted for improvement and the general welfare. He was elected one of the Foundation Fellows of the Royal College when the first supplemental charter was obtained.

Death has removed from the list another of the recently-elected Honorary Associates of the Royal College of Veterinary Surgeons. On the morning of March 28th, Dr. Hering died calmly and without a struggle, having five days previously had a slight apoplectic attack with loss of consciousness; he never rallied. Dr. Hering was in his 82nd year, having been born in 1799 at Stuttgart. Up to the moment of the attack he was hale and hearty, and likely to live for many years—the life and ornament of his profession in his native town and throughout Wurtemberg. Of the many illustrious veterinarians Germany has produced, Hering stands among the foremost, either as a scholar, linguist, scientist, or writer. Nearly all his professional career was in connection with the Stuttgart Veterinary School; he was the founder, and up to the day of his death the editor of the *Repertorium der Thierheilkunde*, now in its forty-second year. This journal is a precious record of current veterinary science, and its value chiefly depended on the rare skill and linguistic ability of Hering. He was also the author of several standard works on Veterinary Medicine and Surgery. On his election as Honorary Associate of the R.C.V.S., to mark his appreciation of the honour conferred on him, he presented the library with copies of his works, accompanying them with an autograph and most characteristic letter in English. Though he had long exceeded the threescore years and ten allotted to man, yet his decease must be regarded as a heavy loss to veterinary science. He died full of years and honours. "Möge der hochverdiente theure Mann in Frieden ruhen, nach welchem er sich in den letzten Jahren so sehr gesehnt hat."

Jurisprudence.

[The following case illustrates, to some extent, the urgent necessity there exists for the enactment of the Veterinary Surgeons' Bill. Mr. Harvey is a fair specimen of the audacious pretenders to whose arrogance and ignorance we have left the public exposed for so many years. It is to be hoped that such men will soon have to drop the title which enables them to impose on those whom the law should protect.]

FOOT-AND-MOUTH DISEASE AT WEST HARTLEPOOL.

A COWKEEPER FINED £10.

ON March 14th, at the West Hartlepool County Police Court, before Messrs. T. Walker, Hutchinson, Hodgson, and Dr. Gourley, Moses Ward, cowkeeper, Burbank Street, was charged with neglecting to report the outbreak of Foot-and-Mouth Disease on his premises. Mr. R. Bell appeared for the defence. Mr. Marley, superintendent of police, said that last Sunday, the 6th inst., the defendant went to him and informed him that two of his cows were unwell, and he was afraid they might be commencing with Foot-

and-Mouth Disease. He asked witness to call and see them, and on the next morning he did so. He found that Mr. Ward had sixteen cows, and twelve were suffering from Foot-and-Mouth Disease. Several of them had been suffering for at least fourteen days, in his opinion. He pointed out two cows which he had recently bought, one from Wolviston and another from Billingham. He found those two to be the worst. He examined them that morning with Mr. Peele, veterinary surgeon, and found them almost recovered. When he first examined them he found their feet had been tarred. One of the two which appeared most ill died last Tuesday.

Cross-examined by Mr. Bell: One of the two cows which were brought from Billingham was the last to be affected. On Sunday afternoon Mr. Ward told him he had been away from home that week. The byres were neither very clean nor yet well ventilated. Twelve were ill when he first saw them, but some were recovering.

Mr. H. Peele, M.R.C.V.S., Veterinary Inspector of the Privy Council, said when he visited the cattle with Mr. Marley he found twelve suffering, but some fast recovering. One died from the disease on Tuesday last. This morning he found many of them almost better. Fourteen were milch cows.

By Mr. Marley: When he first saw them they were in the last stage, and must have been suffering a fortnight at least.

By Mr. Hodgson: The milker would have seen that the cows were affected immediately.

Cross-examined by Mr. Bell: The disease had been on the premises a fortnight before it was reported. He said to the defendant that he had had the disease among his cows for fourteen days, but he made no reply. Defendant, with twenty-one years' experience of cows, must have known they were infected as soon as the disease broke out.

Mr. Bell, for the defence, said that they admitted the cows were affected, but the defendant had been away from the 2nd March at Northallerton. They were all right when he went away, but he received a letter saying there was something the matter with his cows. He returned on Friday, and when he found out they were suffering from Foot-and-Mouth Disease he reported the circumstance to Mr. Marley. He would prove that such was the case despite what Mr. Peele said about the "fourteen days."

The defendant said he had kept cows twenty-one years. On the 2nd March he went away, leaving the cows all right. He received a letter from his son saying something was the matter with the cows. When he returned and found them suffering from the disease he reported it.

Cross-examined by Mr. Marley: He did not say he had been applying tar to the hoofs for about ten days. He did not say some of the cows were affected before the two cows were brought from Billingham.

Henry Ward, son of the defendant, said his father went to Northallerton on the 2nd March. He was left in charge of the cows, and when his father went away he saw nothing the matter with them. A few days later he found them dropping their milk, and on the Friday he found them rather lame, and later that they had the Foot-and-Mouth Disease.

By Mr. Marley: He could not say exactly that they purchased the tar, but they applied it on Saturday morning. The cow that died on Tuesday was up and well until Monday morning, but on Sunday morning the udder was swelled.

By Mr. Hutchinson: They stopped selling the milk on Sunday, and that from the diseased cattle was poured down the sink.

By Mr. Marley: They got milk from Northallerton for their customers for the milk. He went up with his father to Northallerton. They got the milk for two cows they were expecting to calf, and they thought they would run short.

Mr. Richard Harvey, veterinary surgeon, said he had been a veterinary surgeon for thirty years.

Mr. Marley: Have you a diploma?

Witness: No, *no diploma; it is not necessary for a veterinary surgeon.*

Dr. Gourley: You might as well call a butcher.

Witness: *I am duly and legally qualified. I need no diploma.* It's an insult. I didn't come here to be insulted.

Mr. Bell: Never mind insults.

Witness thought the dead cow had been suffering four or five days.

By Mr. Marley: He could not tell how long the cow's udder had been swollen.

By Mr. Hutchinson: He never knew a cow to die from the disease, and he had seen thousands suffering.

By Mr. Hodgson: He should say they had been suffering about four, five, or six days.

Mr. Bell: Certainly not fourteen?

Witness: No, that opinion is with going to college among a lot of theoretical quacks where there are no cattle.*

By Mr. Walker: The cow died from Sympathetic Fever, and not from Foot-and-Mouth Disease.

The bench retired to consider the case, and after a brief consultation

Mr. Walker said they considered the case proved, and they would inflict a fine of £10 and costs, making a total of £12 4s. They had remembered that the defendant had lost a cow, otherwise they would have inflicted a heavier penalty.

Notes and News.

EXCEPTIONAL PROLIFICACY.—Mr. Ronald Bridgett, the English Vice-Consul at Buenos Ayres, Argentine Republic, writes to a contemporary:—"Last week a pointer bitch belonging to me was delivered of twenty pups eight being born dead over-night and twelve born the following day. The bitch died three days afterwards, and efforts to rear the pups by hand proved fruitless. The bitch was bred in this country from English stock, and the sire also. She has had previous litters of twelve and fourteen."

Mr. Judd, of Atherstone, writes to *The Field* of January 29th:—"On Thursday last, at Netherseal, near Ashby-de-la-Zouch, Mr. Poultenay, of the above village, had a cow give birth to four calves—two bulls and two cows. All did well and fully developed till the following morning at an early hour, when one died; the others are doing well, also the mother."

AN ANOMALY IN RIBS.—A splendid three-years-old short-horn bullock was bought at Newcastle market towards the end of January last, and dressed by Mr. William Blenkinsop, of Newcastle. Thirteen ribs on each side are the natural number for an animal to possess, but this animal had only eleven ribs, with a corresponding shortness in its brisket, such a circumstance being almost unknown.

* The following advertisement appears in the same paper (*Durham County Advertiser*) in which the above trial is reported. It is only one of scores of similar announcements made by unqualified men who impose by assuming the title of qualified men:—

COWS OR SHEEP with Foot-and-Mouth Disease can be CURED in three days. Little loss of condition or milk. See the work on the diseases of cows and sheep, post free 30 stamps, by R. Harvey, Veterinary Surgeon, West Hartlepool.

BICHROMATE OF POTASS.—M. Guttard, in an article in *La Presse Vétérinaire*, highly lauds this salt for the treatment of what he terms "synovial dilatations," and particularly femoro-tibial synovitis in the ox and cow—a frequent malady in his practice, which is in a hilly country. When inflammation is present, cold applications are resorted to for eight days or so; he then applies an ointment of the salt—4 parts to 30 of lard—to one side of the swelling only, the other side being so treated in fifteen days, if a cure has not been effected in that time. There is no blemish left, if the animal has not rubbed or excoriated the part. When applied in stronger preparations than the above, the salt is sometimes absorbed and produces toxic effects.

Correspondence, etc.

THE COURT OF EXAMINERS.

SIR,—Very many members of the veterinary profession, in common with myself, will have read with some surprise and regret the opinions expressed in the last number of your Journal, by Mr. Greaves, on the Court of Examiners—surprise that any member of the Council, or one that for some years has taken so important a part in their deliberations, should venture to bring the Board of Examiners to the bar of public opinion, when it is well known that they have been elected by the representatives of the veterinary profession, and selected by them on an estimate of their character and ability for the performance of their various duties.

There is no necessity to go back forty or fifty years, in order to discuss the merits of those distinguished men who then formed the Court of Examiners, although the general public might be entirely ignorant of their qualifications. The present Board, as well as those preceding, have been from time to time variously constituted, and if their election by the Council of the Royal College of Veterinary Surgeons has been *injudicious*, or its *individual* members held in *no estimation* either by the *profession* or the *public*, they alone are to blame.

Leaving out the seven professors on the Board who are precluded from taking part in the examinations, the seven gentlemen described by Mr. Greaves as "doctors of human medicine," consist of Augustus Voelcker, F.R.S., F.C.S., well known in the agricultural world; J. B. Sanderson, M.D., F.R.S., a distinguished physiologist; Robert Bentley, M.R.C.S., F.L.S., an able professor of botany; James Dunsmure, M.D., F.R.C.S.; Alex. Crum Brown, M.D., F.R.C.P.; William Turner, M.B., F.R.C.S., and Alex. Dickson, M.D., F.R.S. These latter gentlemen, connected with the Board in Scotland, I have not the pleasure of knowing; but I doubt not that they are as well known and respected as those in England. The remaining members of the Board, which *finally* examine and *grant the diploma*, is composed entirely of members of the Royal College of Veterinary Surgeons, and their reputation needs no defence on my part. Mr. Greaves having drawn attention to the constitution of the Board of Examiners, proceeds to assert "that the present mode of examination of our students is not thorough, and the result is that students are lamentably deficient in their veterinary knowledge, thus bringing disgrace upon themselves and the profession." It is a subject for regret that this obscure charge has been brought against the Board, because I am persuaded that there are no men who more conscientiously endeavour to discharge the duties imposed upon them, or are more desirous of ascertaining the qualifications of the veterinary student, than the existing Board. If any member of the Council considers that the present state of

the examinations is defective, why does he not stand up in his place, state what is required, and suggest a remedy? For my own part, I wonder that the Council have never had the civility to consult the Board of Examiners on any subject, and am surprised that they do not place more confidence in their discretion. If it is determined to make the examinations more effective, the examiners must be allowed *more time* to devote to the practical and *viva voce* examinations, and it would be well if these and other matters received that proper consideration which they demand.

From the position I occasionally occupy on the Board, I may observe that whilst the Examiners have frequently regretted the failure of many to obtain their diploma, I do not remember to have heard the professors bitterly complain of the number rejected; on the contrary, they well know what the idle or ignorantly educated student may expect, and they endeavour to inculcate into their minds that knowledge which is required to make them successful practitioners. The result of the recent examinations confirms the truth of my remarks. Finally, I believe that I am pretty well acquainted with the requirements of the veterinary profession, and am equally interested in the advancement of its members both socially and professionally; but this is not the place to discuss this subject, and I protest against the observations of others who would bring ridicule on any body of men, be they professors, human doctors, or horse doctors.

Aldershot, *April 8th*, 1881. THOS. WALTON MAYER.

THE ARMY VETERINARY SCHOOL.

DEAR SIR,—I was very interested and instructed with the two inaugural addresses read before their respective societies,* and since published in your valuable Journal for this month. The news contained in them of the rapid rise and progress of the profession must be welcome intelligence to every one who is a well-wisher of our prosperity. Many of the causes which have led to our deserving elevation arose, and have been started, by you, Mr. Editor; the crowning one, in my opinion, is yet to come, namely—the passing of the Veterinary Medical Bill, which will tend much to reduce ordinary quackery, and for the future empirics will be called by their proper names, instead of assumed ones. One little matter in Mr. Lawson's address I do not clearly comprehend, neither can I see the utility of what he so much lauds. I allude to "The Army Veterinary School." Unfortunately for my better understanding, I reside far away from any large centre or veterinary medical association; consequently, I have only the veterinary periodicals to gain information of what is going on in our professional world. But it seems to me, sir, that this school may prove a great source of injury to us by-and-by, perhaps in the no very distant future. In the first place, we are told that lectures are given to farriers and farrier-majors, certificates being awarded, showing that they have attended such lectures. What is this but a repetition of the Highland and Agricultural Society's certificate system, which you have laboured so earnestly and so hard to put down? I venture to say that this school will prove as prolific a source of quackery, and quite as obstinate to deal with, as any past or present. These men, when they leave the army, will set themselves in country towns and become certificated practitioners, competing with, and to some extent injuring gentlemen who have devoted the early part of their lives, and expended no inconsiderable amount of wealth in the acquirement of a somewhat difficult and intricate science.

It is evident that one of these certificated men will be a much stronger

* The Lancashire and the Liverpool Societies.

opponent and offer greater resistance, than an ordinary quack ; for the latter has rarely any qualification whatever, but the former will be enabled to flaunt his certificate and display his imperfect veterinary knowledge in the face of every man with whom he comes in contact. But this is not the only danger I see. Mr. Lawson says that the officers also take a great interest in this school, for as many as nearly fifty were present at one lecture which he attended. Will not these gentlemen in time consider themselves competent to treat the horses in their regiments, and thus successfully shut the door to a number of veterinary surgeons who otherwise would have had this opportunity of gaining a livelihood, and what is still more dear to many, a good reputation ?

The policy of opening this road to veterinary qualification is an unwise and a retrograde step. It may, nay is almost certain, to lead to serious consequences. The one and only medium to become a qualified practitioner of veterinary science, should be by passing the examinations of the Royal College of Veterinary Surgeons.

Yours faithfully,

Barnstaple, *April 9th.* W. PENHALE.

NATURA VERA OF BURSATTEE AND CANKER.

SIR,—On perusing Mr. Burke's notes on Natura Vera of Bursattee and Canker, I have been surprised at that gentleman's extremely egotistical style—this more especially the case when we learn that the author is a student. All this, I suppose, we must pardon, as I should imagine he has a deal to learn in the world yet.

In commencing his paper, he starts by making a fierce attack upon the profession : this was uncalled for ; it would have been much better taste in him to have avoided any satirical remarks upon their theories regarding this disease. He next has the effrontery to state whose description of the disease is the best, finishing the paragraph by saying that all the other descriptions are useless and misleading. As all the others include such names as first-class veterinary surgeon Western, Gov. Body Guard, Madras, and Mr. Spooner Hart, V.S., of Calcutta, two of our most practical Indian veterinary surgeons, I beg strongly to differ with him.

After this, Mr. Burke gets intensely amusing ; he says that during his holidays he found the disease to be Cancroid Epithelioma. He gives us no reasons for arriving at this conclusion. He does not even give us an account of what he saw under the microscope, but simply states that this is the *true nature* of the disease. Now all credit to Mr. Burke if this is true (which I very much doubt), but I think we ought to be very cautious in accepting this nature of the disease without having a full description given us of its microscopical appearances, chemical reactions, etc. Is Mr. Burke sure he was examining Bursattee sore specimens? Had he been examining Epithelial Cancer previously, and not cleaned his slide properly? My own impression is that there has been a mistake somewhere, as, in microscopical investigations of this disease, extending over many months, during which time some hundreds of preparations were examined, I never saw anything approaching Cancroid Epithelioma.

The next step in the essay is that we are regaled with what I suppose is a pet theory regarding its origin, viz., "flies"; and it is a very good thing that the part played by these beings in the production of the disease is "apparent" to Mr. Burke, as practically we know that flies do not cause this affection, or else why is Bursattee almost unknown in Southern India, where flies are quite as numerous as they are in the North? and surely if they can produce these ravages among horses, man could not be exempt from something, who is bothered with them just as much. Has Mr. Burke been in an Indian

azaar and seen children sitting on the ground, and not a square inch of their unclothed skin to be seen for flies? and yet we never hear of disease being set up from this source, although I have seen thousands of these tormentors on a native child. He now deals with the definition and etiology, and the recurrent nature of the disease, and treats the matter as Cancer from a human surgical point of view. Under the head of Kunkur our breath is completely taken away when we are told that Bursattee and Canker *are one and the same disease.** And here, again (speaking of Kunkur), thinking men are quietly "told off" because their theories as to the nature of this deposit do not agree with Mr. Burke's. One person is "right in one sense" and "wrong in another," whilst another is "wholly wrong." The truth, I acknowledge, is not always pleasant, but Mr. Burke need not have been so scathing in his condemnation. It is unkind in one possessing so much knowledge to rebuke our ignorance so abruptly. In speaking of the diagnosis, he says that the only disease it is likely to be mistaken for is Lymphadenoma. How many cases of this disease has Mr. Burke met with? Speaking personally, in ten years' experience I have only seen one, and that was at College, whereas we could see quite fifty or sixty cases of Bursattee in a year in Bengal.

In conclusion, can Mr. Burke answer these questions:—1. Do we get any deposit in the internal organs of man from Cancroid Epithelioma, the same as he describes as arising from this affection in the horse? 2. Does Cancroid Epithelioma in man heal spontaneously, never to be seen again; or to break out the following year, the same as is constantly seen in Bursattee?

Believe me, sir,

Yours truly,

F. SMITH, V.S.,

India, *22nd March*, 1881. *12th Royal Lancers.*

ARMY VETERINARY DEPARTMENT.—UNIFICATION.

SIR,—From the purport of a paragraph which appeared in the *Army and Navy Gazette*, the unification of our department has been completed. Under circumstances which we are told have been extremely distressing to the head of the department, the work has at last been accomplished. It seems to me somewhat remarkable that in all cases where measures of a coercive nature are brought forward, the plea is invariably one of urgency, and expressions of extreme regret never fail to accompany them. Recalcitrant cavalrymen have opportunely furnished the pretext, and repression of the regimental appointments has followed as a consequence. Why the first of April was selected as the day upon which to effect the *coup d'état* will remain for ever a mystery. Finding ourselves departmental, we are naturally tempted to ask when we may expect our "land bill." Will any one venture to suggest that we have not yet manifested the disorderly qualifications necessary to entitle us to "a large and liberal measure"?

Entering a new department is not unlike entering a new house—curiosity will come uppermost, and we are tempted to look round and ascertain the character of the new abode. Without being hypercritical as regards the

* It does not follow that even had Mr. Burke found Kunkur in Canker cases that it necessarily proves the identity of the two diseases, as he tells us he recognises in our patients a "Calcific Diathesis," which explains the deposit or calcareous material in any newly-forming structure. Canker is alse spoken of as one of the results of the disease, and the whole of the organic structures of the foot are made to suffer from Bursattee. A case of Caries due to Bursattee pure and simple (and not to the action of powerful caustic used for its cure) would be very interesting.

internal adornments, it may not, under the circumstances, be considered unpardonably rude in us to see that the roof is at any rate watertight. We are now fairly embarked in a new venture, and in a fair position to ask ourselves, Under what conditions, favourable or unfavourable, do we start? With a view to bring about an understanding and arrive at conclusions with some approach to unanimity, the following jottings are submitted to your readers. I do sincerely trust that abler pens than mine will follow up these subjects, for it is something towards a settlement when it is ascertained *what* it is we all desire and are willing to work for.

1. *Effective Pay.*—The same as when holding regimental appointments, with substantial increase as regards allowances—thus serving the interests of some, whilst affording at its best but poor compensation to others for the loss of their mess privileges. In India the pay and allowances have long ceased to tempt men to serve in that country, and no policy for removing the tension on the India roster will succeed, which does not include in its programme improvement in the pay and allowances of those serving in India. Make the Indian appointments *worth having*, and competition to serve there will not be long in making itself felt, as is the case in other services.

2. *Promotion.*—The condition of the department under this heading is very far from being satisfactory. We have been steadily receding from the position gained for us by the warrant of '59. In this respect, as compared with other departments, our position is unique. Medical officers promoted to captains on joining, and to the rank of majors at twelve years' service unconditionally; quartermasters to the rank of captain at ten years' commissioned service; whilst veterinary surgeons who were eligible for promotion to this grade at *five years'* service under a warrant twenty-two years old, have ceased to be eligible until the completion of twelve years' service, and even then may not be promoted—*facilis est descensus Averni!*

3. *Home and Foreign Service.*—A clear gain is here scored to the department. For some years past the veterinary surgeons of R.A. and A.V.D. have been worked on the same roster, so that the increment of a number of veterinary surgeons from the cavalry, many of whom have never been out of the United Kingdom, represents a positive and material gain to the majority, whilst at the same time it opens up a lot of home appointments for those returning from foreign service.

4. *Uniform.*—This will be less costly than the majority of regimental dresses, but the primary cost of the change represents a considerable outlay, notwithstanding the "reasonable period" given to wear out our present clothes. In spite of the 1¾-inch lace insisted upon in your notice, the forage-cap still requires amendment: at present it is the forage-cap of the non-commissioned officers of Royal Engineers. To make it presentable, it should have some lace upon the crown as a support to the purl button. Some have already supplied this deficiency by adopting a pattern of their own, which greatly improves the appearance of the cap, but is absolutely destructive to uniformity. The patrol-jacket, if retained, should be made in such a way as to admit of its being worn *over* the stable-jacket when desirable; at present it cannot be so worn. The staff frock coat would be an improvement on this jacket, and is a far more becoming dress for professional men. It has, however, the disadvantage of not suiting all figures.

5. *Non-effective Pay.*—We need only compare the terms given to us in the half-pay schedule of our warrant, with those accorded to other departments. Take the optional retirement at twenty years' service. The surgeon can go on £1 a day; the first-class veterinary surgeon on 9s. a day, and veterinary surgeons on 7s. 3d., for the same period of service. Quartermasters are to receive £200 a year—*i.e.*, 11s. a day after ten years' com-

missioned service. If some change be not made by way of improving these rates of half-pay, it will not be very long before a dead-lock will take place as regards promotion into the first-class grade. Only under the greatest possible pressure can men be induced to accept 9s. a day as compensation for the loss of twenty of the best years of their lives.

6. *Social Status.*—The status of a veterinary surgeon in the Army, it cannot be denied, mainly depended upon his regimental connection, and unless something transpires, which is not very evident at the present moment, we shall not be called upon to congratulate ourselves upon the change now initiated. The A.M.D. were supported through their transition troubles by the knowledge that they were closely linked to, and supported by, a powerfully organized profession outside, recognized by the State, and admitted to all social advantages on equal terms with other professions—a jealous body too, which had made up its mind to see the rights of its military *confrères* respected, and what is more to the point, possessing the means of pressing their views upon the War Office with irresistible force. Have *we* anything of this nature to fall back upon? Why, as a matter of fact, we have not yet secured an *entrée* to society—the first rung of the social ladder is not yet reached! I am quite ready to admit that laudable efforts have been, and are being, made to raise the status of our profession, and to obtain for it public recognition; but such efforts represent the labour of a few persevering and brave spirits struggling in the midst of a disorganized and disheartened body, rather than the firm determination of a united profession to secure its rights at any sacrifice. The future may be bright, and certainly I have no wish to dull the "silver lining" of our storm-cloud; but viewing this matter as it presents itself to us to-day, it cannot be disguised that to whatever altitude we are destined to attain in the future, our present position is neither satisfactory nor promising. I remain, sir,

Your obedient servant,

"VETULA AVIS."

BROSNAN *v.* BIGNOLD.

SIR,—Pray pardon me in my first attempt to pen for type; for you know how nervous we all feel on our first public appearance. Having made this beginning, I will, firstly, heartily thank Mr. J. W. Hill for his very generous and kind letter in your last issue. And at the same time, I publicly thank those members of the profession who so kindly and judiciously supported me during the trial, as well as those gentlemen who have, by private letters, sympathised with me. Thanks many, and sincerely I thank you; but I am glad to say my position is such that I can bear my own burden. How a brother practitioner not so favoured might have borne the burden, I fear to say. Finding myself in a dilemma, I could not do otherwise than fight; and although I did not entirely rout the enemy, he retired *hors de combat.*

A few words on business now. Every practitioner knows the kind of people we have to do with in our daily practice; so he can easily picture my client. I keep two forges, with men as good as can be found. I showed them in court, and was complimented on them. All that can be done for the customers sending their horses to the forge, is done well and carefully. Now if carelessness and drunkenness were allowed, I feel I should suffer; but it is not so. A bad-footed brute is sent to be shod for some two years—lame sometimes, sound others. One day a shoe is lost in London, and it is reapplied; the horse goes lame; six weeks after this, two strangers to the horse, members of my profession, see it and certify that the said horse is suffering from Quittor or foot disease, the result of a prick and maltreatment. I am not consulted; no question is asked; the horse is kept under treatment;

sold before cured, for a trifle; bought by the member attending it, and I have a writ for the expenses attending this professional frolic and amusement, if such I may term it. The fun and amusement I fail to see; it is too serious, and so my two professional opponents would say if they had to draw on their banker for £310 for shoeing a horse to the best of their ability for 5s.

Thanking you for your space and forbearance in correcting my MS.,

I remain, yours obediently,

S. BIGNOLD.

THE FITZWYGRAM PRIZES.

SIR,—In the report of the annual meeting of the Royal College of Veterinary Surgeons, published in the June number of the VETERINARY JOURNAL for last year, appeared the following :—

"The Fitzwygram Prizes.—In order to increase the number of candidates, and to offer further inducement for competition, the donor gave notice that the competition for these prizes would *not hereafter be limited* to those who had *passed with 'great credit,'* but would be extended to members of the Royal College of Veterinary Surgeons who held their diploma for not more than *two years*."

In an editorial note in the April number of the same Journal for this year, we have the following announcement :—

"The Fitzwygram Prizes.—We are requested to intimate that the competition for these prizes will take place as soon as possible after the close of the examinations in Scotland. . . . . The entries will be limited to those who have graduated since the last competition, and who passed with 'very great' or 'great credit.'"

The two statements are directly opposed to one another, and are certainly misleading to those who have or had the intention of competing under the conditions laid down in the first statement, which I have quoted. According to this, a graduate of April, 1880, would be eligible for the examination in April, 1882, whereas according to the later announcement he must present himself at the forthcoming one. Whilst fully appreciating the kindness of the distinguished donor, and admitting his right to regulate and alter the stipulations from time to time, one cannot help thinking it would be highly desirable were they fixed and adhered to.

I remain, yours faithfully,

"A GRADUATE OF APRIL, 1880."

WHY IS THE ARMY VETERINARY DEPARTMENT UNPOPULAR?—A CORRECTION.

DEAR SIR,—Kindly find space for the following correction anent my last letter on the above subject. In order to explain this apparent ignorance, I may state that, owing to my non-fixity of abode, the VETERINARY JOURNAL for February never came to hand. A professional brother, however, came to my assistance by lending me the one supplied to him. Therein I found it stated that veterinary surgeons, under the new warrant, *do run for pension.* This, you will remember, was the view I formerly held of the new warrant, or at least such may be judged by my not referring to it until taken to task by "Ubique." I am indeed glad to find that such is the case, for it very considerably alters the aspect of the whole affair; and should the anomalies I have before pointed out—*notably, deferred promotion*—cease to exist, the Army Veterinary Department would be worth the consideration of really good representative men of the profession.

Our present chief, I hear, is fighting our battle right manfully, so we may expect ere long to be placed on a footing which will put an end to this discordant twaddle, and by so doing create a new order of things possessing a healthy and vigorous growth. Believe me, yours faithfully,

April 4th. "PFERD."

VETERINARY LITERATURE.

DEAR SIR,—Whereas once we were contented with a moderate amount of journalistic display, which, I need not contend, was not only a reproach to us, but brought upon us the ridicule of continental professional confrères; now, happily, what with increased advantages for study, advanced free-thinkers, and suitable pioneers, we have emerged from that pernicious state of thraldom, which was so deleterious to our well being. Such has been the impetus given, that our minds are in a continual state of activity, yearning as it were, for innovations that may place us on the pinnacle of fame. Veterinary science, although not so fully recognised as it ought to be, is, nevertheless, assuming a higher status, and will ere long reap the reward which hitherto has been denied it. We may be a nation of shopkeepers, but still we have at heart the well-being of all domesticated animals. No nation can compete with us in the interest evinced in the improvement of all classes of stock; witness our agricultural and other meetings, which give a stimulus to increased exertion for the advancement of this particular science. We stand foremost in our love for all animals. Continental nations are taking their cue from the "Britisher"; hence we have in Germany, France, Belgium, etc., notices that societies for this purpose have or are about to be formed after our model. Withal this, we have, with very few exceptions, been behind in matters of veterinary literature.

Our jealousies have at length been roused, and our sensibilities played upon, whether by the taunts of those in a position to guide, or from the sense of degradation that must inevitably follow this state of chaos, it matters not. Advancement has become our aim, and, to use a well-known phrase, we have in our ranks men of "light and leading" who cannot fail in the long run to throw their bright luminaries on our dark and dreary path. These are no satellites whose light is as evanescent as the will-o'-the-wisp, but men whose example will act as perpetual brightness, even when adversity may be knocking loudest at our door.

It is in the memory of most of us, when veterinary literature was meagre in the extreme, and when one's research began and ended in the knowledge gleaned from a few books written for the two-fold purpose of guiding the professional man and enlightening the amateur, but which failed in both instances. Journalism existed only in name; it is true that now and again a spurt was made by those who had taken up the reins, but their conscientious convictions were soon pocketed, in order to give place to those smooth conventionalities in which they so much excelled. The instability of public opinion slowly but surely brought an end to this literary imbecility. Our development has at length approached it manhood, when one's ideas are arranged in something like symmetrical form. With this new starting-point we are enabled to follow our leaders with that clearness of perception which would have amazed the old fog-smitten and fossilised retarders of reform.

My object is not to indulge in Utopian wanderings, but to ask you, Mr. Editor, whether the time has not now arrived when the VETERINARY JOURNAL may not be issued *bi-monthly*. I notice with great pleasure, that you are often in the, shall I say happy, position of having too much matter for insertion in the various issues of your Journal, which is now circulated in

nearly every part of the globe. I am aware that this plan would entail an increased amount of anxiety and trouble at your hands; but knowing your philanthropic views in everything pertaining to our advancement, I feel I am not asking too much; and I am sure that I have the profession generally with me, when I state, that we will one and all do our best, by contributions, etc., to reduce or lighten the arduous task which this innovation would most assuredly impose upon you.

In India, the advent of each number of the VETERINARY JOURNAL is anticipated with feelings akin to ecstasy. The time appears long, after having read and almost spelt every word its pages contain, ere another issue appears on the scene. We are mindful of small mercies, but there cannot be any harm in wishing a larger portion to be meted out to us; hoping you will give this your serious consideration. I remain,

Yours faithfully,

April 4th. "PFERD."

[The conversion of the Journal from a monthly to a semi-monthly has long been under consideration. It will be carried into operation whenever circumstances permit. Lack of contributions is not one of the obstacles to the change.]

THE UNITED HORSE-SHOE NAIL COMPANY (LIMITED).—As will be seen by reference to our advertising sheet, this company, established to manufacture improved horse-shoe nails by machinery, having purchased the interests of the "Acmé" and "European Globe" Companies, commences operations with the fair prospect that the amount of business already in hand is sufficient to ensure a dividend upon the share capital, which is now placed before the profession and the public for subscription.

Communications, Books, Journals, etc., Received.

COMMUNICATIONS have been received from M. Hedley, Dublin; G. A Banham, London; W. F. Garside, Vienna; F. Smith, A.V.D., India; J. Wilson, Nantwich; T. Runciman, Market Deeping; G. Elphick, Newcastle-on-Tyne; T. W. Mayer, Aldershot; G. Mitchell, Melbourne; W. Penhale, Barnstaple; J. D. Allman, London; S. Locke, Manchester; "Pferd"; "Vetula Avis"; S. Bignold, London; "A Graduate of 1880"; I. Penberthy, London; J. B. Daniel, London.

BOOKS AND PAMPHLETS: Report upon The Diseases in Stock Act, Victoria; Contagious Diseases (Animals) Act, Ireland; *R. S. Reynolds*, An Essay on the Breeding and Management of Cart Horses; *H. Anacker*, Landwirthschaftliche Thierlehre und Thierheilkunde; *C. G. H. Erdmann and C. H. Hertwig*, Thierärztliche Receptirkunde und Pharmakopöe; *R. Farquharson*, A Guide to Therapeutics; *E. T. Wilson*, Disinfectants, and How to Use them; *G. Fogliata*, Contribuzione allo studio d. Patologia della Milza del Cavallo.

JOURNALS, ETC.: *La Presse Vétérinaire; Recueil de Méd. Vétérinaire; Lancet; Annales de Méd. Vétérinaire; British Medical Journal; Sanitary Journal; Live Stock Journal; Mark Lane Express; Repertorium der Thierheilkunde; Journal de Méd. Vétérinaire; Archives Vétérinaire; American Live Stock Journal; Medical Press and Circular; Archiv f. Wissenschaftliche und Practishe Thierheilkunde; La Clinica Veterinaria; Agricultural Gazette; Farmer; Wochenschrift fur Thierheilkunde und Thierzucht; Revue Vétérinaire; American Veterinary Review; L'Echo Vétérinaire; Der Thierarzt.*

NEWSPAPERS: *Melbourne Age; Irish Times; Manchester Guardian; Essex Herald; Freeman's Journal; York Herald; Leeds Mercury; Scotsman.*